Norbert Winter

The Universe Code Ψ-19,

the Complete Formula of the Universe, that fully constructs Dark Matter, Normal Matter/Antimatter and Dark Energy with coupled 4-dimensional space-time

Ψ-19 $\equiv$ Ψ_U^{19}

V.7.

spinors: $\Psi\ \Psi\ \overline{\Psi}\ \ \overline{\Psi}\ \ \overline{\Psi}\ \overline{\Psi}\ \ \Psi\ \Psi\ \ \Psi\ \overline{\Psi}(x)\ \Psi\ \ \Psi\ \Psi\ \ \overline{\Psi}\ \overline{\Psi}\ \ \overline{\Psi}\ \ \overline{\Psi}\ \Psi\ \Psi$

pointsplits: $-\xi,-\varrho,-\varepsilon_9\ \ -\xi,-\varrho,+\varepsilon_9\ \ -\eta,-\varepsilon_8\ \ -\eta,+\varepsilon_8\ \ -\xi,-\varepsilon_7\ \ -\xi,+\varepsilon_7\ \ -\xi,+\varrho,-\varepsilon_6\ \ -\xi,+\varrho,+\varepsilon_6\ \ -\varepsilon_1\ \ 0\ \ +\varepsilon_1\ \ +\xi,-\lambda,-\varepsilon_2\ \ +\xi,-\lambda,+\varepsilon_2\ \ +\xi,-\varepsilon_3\ \ +\xi,+\varepsilon_3\ \ +\eta,-\varepsilon_4\ \ +\eta,+\varepsilon_4\ \ +\xi,+\lambda,-\varepsilon_5\ \ +\xi,+\lambda,+\varepsilon_5$

The structure V.7. that is necessarily and unequivocally created from the elementary structure I.1., I.2., I.3. as described in Chapters I.-V., becoming the fundamental structure of all manifestations of matter and force in the Universe.

$$D\,\Psi(x) = \Psi(x-\sigma_1)\ \overline{\Psi}(x)\ \Psi(x+\sigma_1)\ ;\ \sigma_1 \rightarrow 0$$

$$D\,\overline{\Psi}(x) = \overline{\Psi}(x-\sigma_2)\ \Psi(x)\ \overline{\Psi}(x+\sigma_2)\ ;\ \sigma_2 \rightarrow 0$$

$x \equiv$ ● interaction point, $\sigma \equiv$ point split

with repulsion $\equiv$ $\leftarrow -\sigma \quad +\sigma \rightarrow$

attraction $\equiv$ $\rightarrow \quad \leftarrow$

Ψ-19 $\equiv$ Ψ_U^{19} is the overarching unified inner-structural composition and order system from which:

- **Dark Matter is inner-structurally composed, i.e. the elementary particles of Dark Matter are inner-structurally composed and created, together with their properties.**
- **Normal Matter/Antimatter is inner-structurally composed, i.e. the elementary particles of Normal Matter are inner-structurally composed and created, together with their properties.**
- **Dark Energy and the coupled construction of expanding 4-dimensional space-time are inner-structurally composed, i.e. the Dark Energy bosons and the coupled expanding 4-dimensional space-time elementary entities are inner-structurally composed and created.**

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Norbert Winter, 17.03.2017

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26/05/2014: “The Law of Greatest Simplicity” (GDE)
22/05/2015: “The Unified Construction Process of the Universe from Smallest to Largest” (EAU)
17/12/2015: “The Act of Creation of the Universe” (UEA)
04/08/2016: “The Development Process of the Universe from the Big Bang until Today” (UEP)
17/03/2017: “The Universe Code Ψ-19” (UC)
17/03/2017: “The 6 Key Processes in the Creation and Development of the Universe” (KPU)

Preface:

This publication, "The Universe Code Ψ-19" (abbreviated to "UC"), is identical to the newly added Chapter XIV. of "The Unified Construction Process of the Universe and the Development Process of the Universe from the Big Bang until Today" (abbreviated to "EAU" in citations), which was also published on 17/03/2017. The publications "The Act of Creation of the Universe", "The Development Process of the Universe", and "The Universe Code Ψ-19" are abbreviated to UEA, UEP, and UC respectively in citations.

Chapters I. to X. of EAU show in detail how the Big Bang process led to the construction of the elementary particle set of "Normal Matter" (the proton p^+, the electron e^-, the neutrino ν, and the force bosons of the strong interaction St, the weak interaction Z, the electromagnetic interaction γ, and gravitation G). This was namely triggered by the systemically necessary rupture of the unstable force particle $\overline{G}$ created before the Big Bang, i.e. the first particle ever created. It is shown that the force particle $\overline{G}$ created before the Big Bang was an unstable, most extremely strongly repulsive force boson with an extremely short range, and that these two properties of "most extremely strongly repulsive" and "extremely short-range" meant that the rupture of $\overline{G}$ was "pre-programmed".
This preordained and inevitable rupture (≡ start of the big Bang) created the first elementary particle set $p^+, e^-, \nu, St, Z, \gamma, G$.

UEA (and EAU, XI.) shows how this rupture of $\overline{G}$ (≡ 1st Big Bang event) set in motion the entirety of the most colossal Big Bang production cascade – the phenomenon that has been historically documented as the Big Bang 13.8 billion years ago – and how this led to the creation of the entirety of the Earliest Universe (early stages of the universe, i.e. directly after the Big Bang 13.8 billion years ago) and its components "Dark Matter" (≡ 66.6%) and "Normal Matter/Antimatter (≡ 33.3%).

UEA also derives the inner-structural particle composition of these matter/force particles (including "Dark Matter" force particles), and thus derives their matter and force properties, allowing them to be exhaustively grouped into a single list of elementary particles of the Earliest Universe (see also EAU, XI.36.).

Building upon these foundations, UEP (and EAU, Chapter XII.) describes the change processes that have taken place within the Universe from the Big Bang until Today. These processes continue to unfold to this day. It is shown why the annihilation processes of both Normal Matter/Antimatter and Dark Matter occurred and continue to occur, and how this in turn led to the creation processes of Dark Energy and the coupled construction of expanding 4-dimensional space-time elementary structure cells (i.e. the expanding structure of space-time).

Thus, UEP shows that 4-dimensional space-time did not exist a priori, but was only created after the Big Bang as a "by-product" of the (pairwise) annihilation processes of the massive matter particles newly created in the Big Bang, and that it continues to be constructed by "ongoing" such annihilation processes to this day.

UEP also describes how each of these matter annihilation processes unfolds inner-structurally, as well as the inner-structural composition of Dark Energy bosons, and how (or why) this leads to the construction of expanding 4-dimensional space-time elementary cells – coupled to the Dark Energy bosons.

Thus, UEP gives a detailed description of the inner-structural relationship between mass, space-time, and energy, and describes how the composition of the universe quantitatively evolved over time from the Big Bang until Today, i.e. the structural progression of the universe via matter-mass annihilation and conversely the generation of Dark Energy and space-time.

The publication "The Universe Code **Ψ-19**" (and EAU, Chapter XIII., abbreviated to "UC") demonstrates that and explains why the entire matter and force structure of the universe, i.e. every component of the universe, namely:

- Dark Matter
- Normal Matter/Antimatter
- Dark Energy with the coupled construction of expanding 4-dimensional space-time

formed from the same identical preformation structure **Ψ**$_{U}^{(19)}$, **<u>and so every part of the universe has the same identical origin</u>**.

UC also shows – as presented in detail in EAU, Chap. I.-V. – that this preformation structure (Ψ(19)U) formed from the fundamental dynamic I.1., I.2., I.3. by means of a necessary and unequivocal process.

Thus: The preformation structure (Ψ(19)U) ≡ (V.7.) underlying everything is the unified inner-structural composition and order system from which the universe developed, from the smallest scales (elementary particles) to the largest scales (global structures of the universe), i.e. from which every component of the universe developed, namely:

- **Dark Matter**
- **Normal Matter/Antimatter**
- **Dark Energy with the coupled construction of expanding 4-dimensional space-time**

This means that, simplifying the notation by writing (Ψ-19) instead of (Ψ(19)U):

(Ψ(19)U) ≡ (Ψ-19) ≡ (V.7.) is the unified inner-structural composition and order system of the universe

≡ Universe Code (Ψ-19)

Furthermore, in this publication, KPU (as well as EAU, XIV.), an overall retrospective analysis describes how the causal succession of all seamlessly interlocking processes in the creation and development of the universe presented in EAU, Chap. I. - XIII. may be represented as a **causal sequence of 6 consecutive key processes** (for details, see KPU, or EAU, Chap. XIV., (KP1) → (KP6)).

Overview of results:

This publication UC shows and explains in detail:

1.	**What the global structure and the causal links in the construction and development process of the Universe are.**
2.	**That this global process unfolds in a sequence of 8 consecutive sub-processes, and how this sequence of processes is causally connected.**
3.	**That the "centrepiece" of the Universe is given by the preformation structure $\Psi^{(19)}_{U}$ ≡ Universe Code Ψ-19, which forms the overarching unified inner-structural composition and order system of the Universe, from which** **• Dark Matter is inner-structurally composed, i.e. the Dark Matter elementary particles and their properties are inner-structurally composed and created.** **• Normal Matter/Antimatter is inner-structurally composed, i.e. the Normal Matter elementary particles and their properties are inner-structually composed and created.** **• Dark Energy and the coupled construction of expanding 4-dimensional space-time elementary entities are inner-structurally composed and created.**
4.	**That the preformation structure $\Psi^{(19)}_{U}$ ≡ Universe Code Ψ-19 ≡ V.7. necessarily and unequivocally formed as a logical consequence of the elementary system I.1., I.2., I.3..**

5.	**That, as laid out in EAU, Chap. I.-XIII., all physical events in the Universe developed and continue to develop from the Universe Code Ψ-19 (each of which is presented in detail in EAU, Chap. I.-XII.).** **That the following processes developed from the Universe Code Ψ-19. Given the wide diversity of physical events, these processes may be referred to as unification processes:** **① The small unification of the electromagnetic and weak interaction (of Normal Matter)** **② The medium unification of the strong, electromagnetic, and weak interaction (of Normal Matter)** **③ The great unification of the strong, electromagnetic, weak, and gravitational interaction (of Normal Matter)** **④ The super-great unification of all interactions (≡ force bosons) in the Universe, i.e.:** **- of Dark Matter $_4\overline{G}$, $_4G$, $_0R$** **- of Normal Matter St, γ , Z, $_1G$** **- of Dark Energy E_1, E_2 with its coupled 4-dimensional space-time elementary entity-based structure.** **⑤ The most colossally great global unification (global unity) of all force bosons and all matter fermions (thus of everything that physically exists):** **- of the Primordial Universe: $_5\overline{G}$, $_3G$, $_2R$; $_1\nu_1$ ≡ massless neutrino, $_1\nu_2$ ≡ massless neutrino, $_1\nu_3$ ≡ massless neutrino** **- of Dark Matter: $_4\overline{G}$, $_4G$, $_0R$; $_2\nu_1$ ≡ massive neutrino, $_2\nu_2$ ≡ massive neutrino, $_1\nu_3$ ≡ massless neutrino** **- of Normal Matter: St, γ , Z, $_1G$; p^+≡ proton, e^- ≡ electron, ν ≡ massless neutrino** **- of Dark Energy: E_1, E_2 with the coupled construction of 4-dimensional space-time elementary entities,** **Therefore, that each and every physically existing object in the Universe has one and the same origin, thus that each and every physically existing object is based on the same original structure and resulting inner-structural composition. This unified original structure is the preformation structure $\Psi^{(19)}_{\{U\}}$, justifying the name of Universe Code Ψ-19.**

6.	**Based on this analytical knowledge of the inner-structural composition and therefore the properties of each Dark Matter elementary particle $_4\overline{G}$, $_4G$, $_0R$; $_2\nu_1$, $_2\nu_2$, $_1\nu_3$, it would be theoretically possible to analytically predict the form of the <u>fundamental Dark Matter</u> atom – the counterpart of the H-atom of Normal Matter (H-atom made of the Normal Matter elementary particles *St*, γ , *Z*, $\overline{G}$; p^+, e^-, ν), and then construct higher Dark Matter atoms from this fundamental Dark Matter atom, thus developing the atomic physics of Dark Matter – analogously to the atomic physics of Normal Matter. When doing so, one fact that might prove important is that – as presented and analysed in VI.4. – the highly massive 4-split elementary particles $_4\overline{G}$ and $_4G$ each have an as-yet-undetermined gravitational charge $\overline{q}$ resp. q (not electrical charge!) and therefore – analogously to Normal Matter, for which the electrical charge ⊕⊖ of the ≥ 3-split elementary particles p^+ and e^- leads to the creation of hydrogen – Dark Matter also leads to the formation of a fundamental Dark Matter atom (A), the fundamental structural unit of Dark Matter, thus further leading to the construction of other, higher Dark Matter atoms. Pursuing this line of research represents a new, extremely interesting area of research, namelythe "<u>atomic physics of Dark Matter</u>".** **(A)** 

Preliminary remarks:

This publication, "The Universe Code Ψ-19" (abbreviated as "UC"), is identical to Chapter XIII. of the publication "The Unified Development Process of the Universe from the Big Bang until Today" (abbreviated to "EAU"), which was newly added on the same date (17/03/2017) of publication. EAU was originally published on 22/05/2015, and has now been extended with the additional Chapters XIII. and XIV.

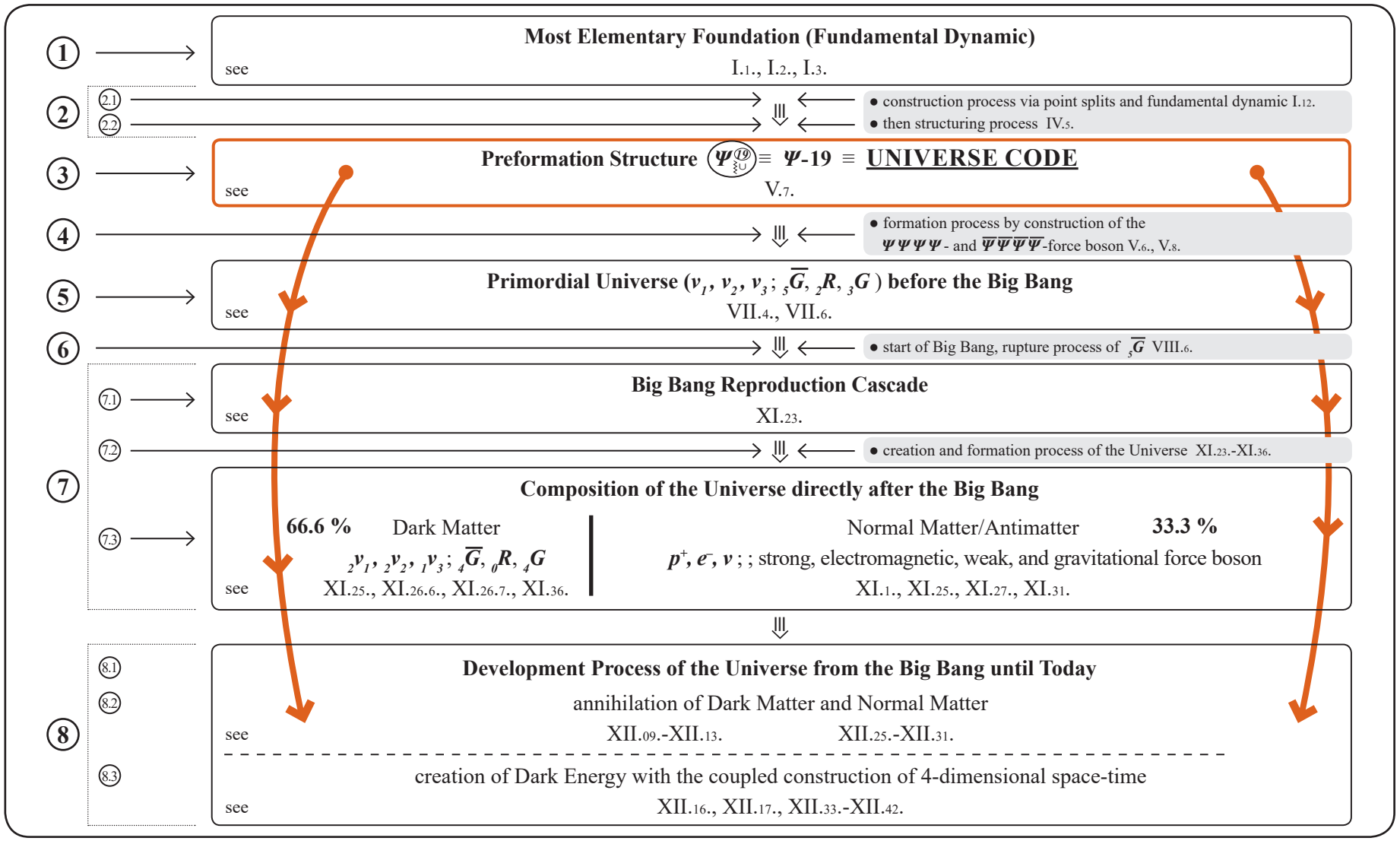
Accordingly, to ensure that all references to sections in EAU are unambiguous, this publication begins its section numbering with XIII.1. and ends with XIII.6.

All references from I. to XIII. therefore refer to EAU.

Let us now proceed to the detailed presentation of UC, with all references and details:

Chapters I.-XII. presents and explains the construction and development process of the Universe in terms of both its overall structure and the causal connections between its parts. During the construction and development process of the Universe, the following chain of global and individual processes unfolds:

XIII.1.



We shall now give individual descriptions of the step ①-⑧ in XIII.1.:

The following individual descriptions XIII.1.① - XIII.1.⑧ of the chain of processes in the construction and development of the Universe each correspond to the chapters, sections, and subsections in EAU, Chap. I.-XIII. The reader can therefore refer to this additional relevant content in each case. Nevertheless, a minimal effort has been made to be self-sufficient in each of the following individual descriptions XIII.1.① - XIII.1.⑧.

The objective of Chapter XIII. is to show that all manifestations of matter and force in the Entire Universe developed from one and the same original structure ≡ Universe Code Ψ-19 ≡ preformation structure $\Psi_{\text{U}}^{(19)}$ ≡ V.7.
meaning that they all come from the same identical origin.
This original underlying structure of everything is reflected even Today in the form of the Universe Code Ψ-19
in the inner-structural composition of each elementary particle in the elementary particle sets of

- **Dark Matter**
- **Normal Matter/Antimatter**
- **Dark Energy with the coupled construction of expanding 4-dimensional space time elementary entities**

(see (XI.36., XI.42.).

The inner-structural composition of each elementary particle unequivocally determines its physical properties (see V.6., VI.3.). These elementary particles are therefore in principle experimentally observable, provided that the necessary experimental conditions can be met.
Normal Matter/Antimatter has been extensively researched experimentally (e.g. at Cern).
Dark Matter and Dark Energy will be experimentally observed and researched in future (e.g. at Cern).
We have only just begun, but we hope to be on the right path.

This publication presents a global theory that includes Dark Matter and Dark Energy as well as Normal Matter/ Antimatter, and which can analytically determine and represent the elementary particles corresponding to each type of matter. Within the context of this theory, it is shown that all elementary particles

- **of Dark Matter**
- **of Normal Matter/Antimatter**
- **of Dark Energy with the coupled construction of expanding 4-dimensional space-time**

existing in the Universe are uniformly developed and constructed from the Universe Code Ψ-19.

This identical inner-structural origin of all elementary particles, i.e.

- **of Dark Matter**
- **of Normal Matter/Antimatter**
- **of Dark Energy with the coupled construction of expanding 4-dimensional space-time**

is presented in full detail in terms of the inner-structural composition of each elementary particle

in XIII.1. 7.2.1 for the elementary particles of Dark Matter
in XIII.1. 7.2.2 for the elementary particles of Normal Matter/Antimatter
in XIII.1. 8.2 / 8.3 for Dark Energy and the coupled expanding 4-dimensional space-time elementary entities

Readers who are specifically interested in the Universe Code Ψ-19 as the unified origin of all elementary particles in the Universe can skip the next sections XIII.1. 1 - XIII.1. 6 and resume reading at sections XIII.1. 7.2, XIII.1. 7.3, XIII.1. 8.2, XIII.1. 8.3 .

Thus: Specifically, the following detailed chain of processes unfolds, corresponding to the subsection XIII.1. :

XIII.1. ① : <u>The formation of the most elementary foundation (fundamental dynamic)</u> (see I.1. - I.4.)**:**

Ψ exists as the most general possible "Something", and there exists a "Something Else" that can be distinguished from this "Something", namely $\overline{\Psi}$. Both of these things satisfy the simplest possible non-linear interaction with respect to each other, which is (with $D \equiv \frac{d}{dx}$ and $dx \equiv \sigma$):

I.1. $D\ \Psi(x) = \Psi(x-\sigma_\alpha)\ \overline{\Psi}(x)\ \Psi(x+\sigma_\alpha)$; $\sigma_\alpha \equiv$ point split with $\sigma_\alpha \to 0$

I.2. $D\ \overline{\Psi}(x) = \overline{\Psi}(x-\sigma_\beta)\ \Psi(x)\ \overline{\Psi}(x+\sigma_\beta)$; $\sigma_\beta \equiv$ point split with $\sigma_\beta \to 0$

$\equiv$ **most elementary structure**

① I.2.1. where $x \equiv \bullet \equiv$ interaction point satisfying: point split dynamic $\sigma \neq 0, \sigma \to 0$

repulsion ≡ separation

attraction ≡ binding

repulsion ≡ separation

attraction ≡ binding

Thus: The point split is unequivocally defined by the differential operator $D \equiv \frac{d}{dx}$, namely as $dx \equiv \sigma$, and acts according to the system of equations I.1. and I.2. The point split structure repulsion and attraction describes the elementary structure of every possible force within the global system, and so no further assumptions are required.

If I.1. and I.2. each hold independently of each other, then both $\Psi(x)$ and $\overline{\Psi}(x)$ must be 4-component spinors, for the following reason: From I.1. it follows that: $D\ \Psi_1 = \Psi_2 \overline{\Psi}_3 \Psi_4$ and from I.2. it follows that: $D\ \overline{\Psi}_5 = \overline{\Psi}_6 \Psi_7 \overline{\Psi}_8$, and so if both I.1. and I.2. hold, there is the following spinor structure.

I.2.2.

Ψ is a $\Psi = (\Psi_1, \Psi_2, \Psi_4, \Psi_7)$ -spinor, i.e. a **4-component spinor**

$\overline{\Psi}$ is a $\overline{\Psi} = (\overline{\Psi}_3, \overline{\Psi}_5, \overline{\Psi}_6, \overline{\Psi}_8)$ -spinor, i.e. a **4-component spinor**

I.3.

From the fundamental interaction: $D\,\Psi = \Psi\,\overline{\Psi}\,\Psi$ and $D\,\overline{\Psi} = \overline{\Psi}\,\Psi\,\overline{\Psi}$, it follows that:
By definition, the differential operator D has a so-called length dimension of -1
(definition: $dim\ D = -1$). Therefore, from this fundamental interaction:

length dimension of $\Psi = -\frac{1}{2}$; $dim\ \Psi = -\frac{1}{2}$ length dimension of $\overline{\Psi} = -\frac{1}{2}$; $dim\ \overline{\Psi} = -\frac{1}{2}$,

1

Because both $\Psi(x)$ and $\overline{\Psi}(x)$ have length dimension $-\frac{1}{2}$:
The basis spinors $\Psi(x)$ and $\overline{\Psi}(x)$ are not observable entities. Observable entities satisfy the following:

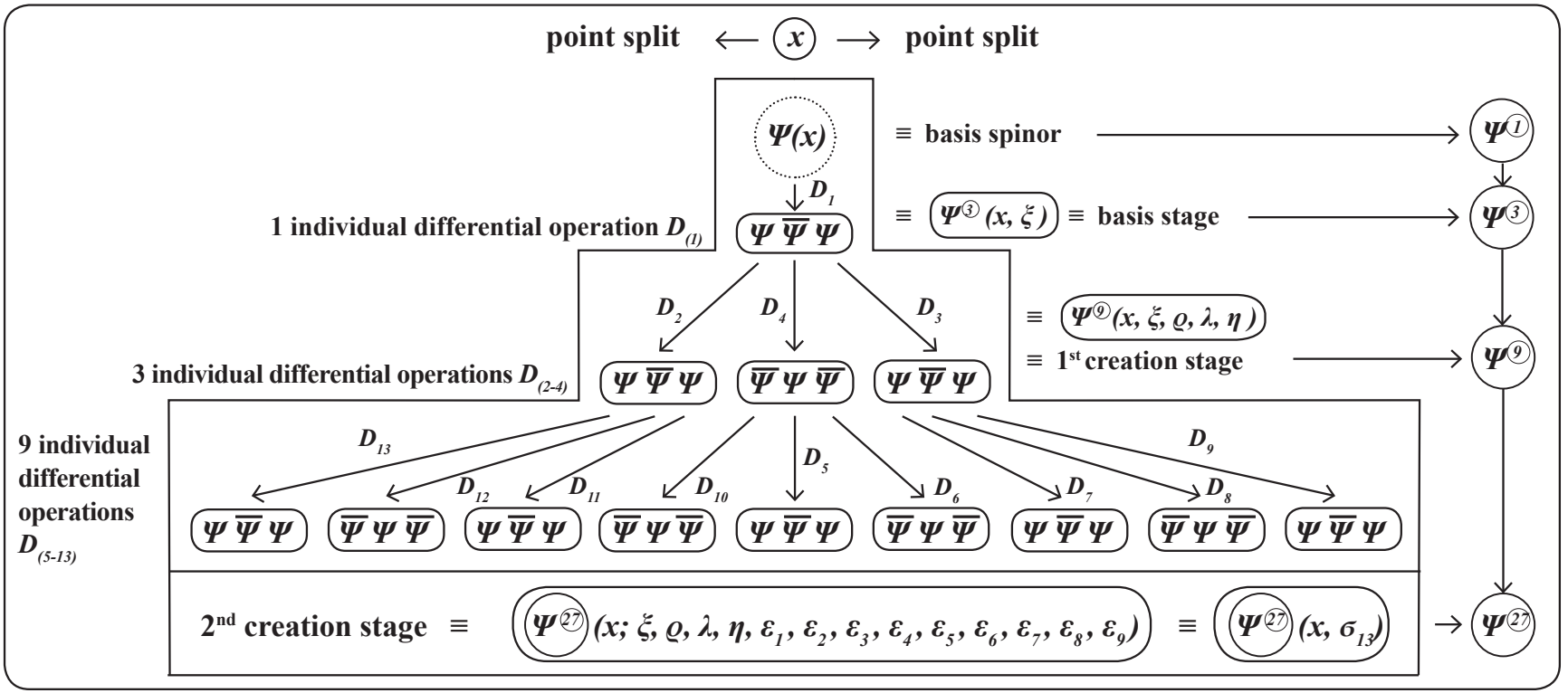
I.4.

- observable fermions have dimension $-\frac{3}{2}$ and are therefore $\Psi^{(3)}$-objects *1)
- observable bosons have dimension -1 or -2 and are therefore $\Psi^{(2)}$- or $\Psi^{(4)}$-objects

*1)) Remark: The notation $\Psi^{(n)}$, n =1, 2, 3, 4 means: spinor product of n spinors, either of the form $\overline{\Psi}$ or Ψ.
This notation is also applicable in general for n > 4, in which case it refers to the point split-separated local neighbourhood (x, σ).

XIII.1. ②, ②.1: The formation of the construction process via point splits and the fundamental dynamic (see I.12., III.4.1.):

I.12.



②

Taking into account the local arrangement – with the ordering from II.4. – of the 1st creation stage $\Psi^{⑨}(x,\sigma_4)$ as well as the point split-separated 2nd creation stage $\Psi^{㉗}(x,\sigma_{13})$ created by the 2nd fundamental process – as described in III.1. to III.4. – the following specifically holds:

III.4.1.

$\Psi^{㉗}$

Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	Ψ	$\bar{\Psi}$	Ψ	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
$-\xi\ -\varrho$	$-\xi\ -\varrho$	$-\xi\ -\varrho$	$-\eta$	$-\eta$	$-\eta$	$-\xi$	$-\xi$	$-\xi$	$-\xi+\varrho$	$-\xi+\varrho$	$-\xi+\varrho$	0	0	0	$+\xi\ -\lambda$	$+\xi\ -\lambda$	$+\xi\ -\lambda$	$+\xi$	$+\xi$	$+\xi$	$+\eta$	$+\eta$	$+\eta$	$+\xi+\lambda$	$+\xi+\lambda$	$+\xi+\lambda$
$-\varepsilon_9$	0	$+\varepsilon_9$	$-\varepsilon_8$	0	$+\varepsilon_8$	$-\varepsilon_7$	0	$+\varepsilon_7$	$-\varepsilon_6$	0	$+\varepsilon_6$	$-\varepsilon_1$	0	$+\varepsilon_1$	$-\varepsilon_2$	0	$+\varepsilon_2$	$-\varepsilon_3$	0	$+\varepsilon_3$	$-\varepsilon_4$	0	$+\varepsilon_4$	$-\varepsilon_5$	0	$+\varepsilon_5$

XIII.1. ②, 2.2: The formation of the structuring and preformation processes (see I.8., IV.1. - IV.8.):

I.8.

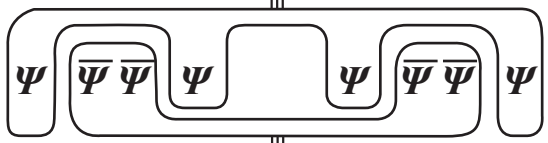
Process	⟹	separ. mom. + separ. energy + binding moment. + binding energy ≡	total
Length dimension	⟹	-1 + -1 + -1 + -1	-4

Thus: The overall structuring process requires a basis spinor set of length dimension -4

⟹ This means: The spinor raw material generated by I.6. must include a spinor subset of dimension -4, which is required for structuring. Since, by I.3., the basis spinors Ψ and $\overline{\Psi}$ have dimension $-\frac{1}{2}$, $dim\ \Psi = -\frac{1}{2}$, this must namely be a spinor subset $\Psi^{(8)}$ with $[dim\ \Psi^{(8)}] = [dim\ -4]$

② IV.5.

The structuring foundation is $\Psi^{(8)} \equiv$



with the structure elements ≀ ≡ separ. and ∪ ≡ binding

(2.2) ⟹ How exactly the structuring foundation $\Psi^{(8)}$ forms is described below:

By means of the point split:

First point split $\sigma \neq 0$: ← x → (repulsion)

Then point split $\sigma \to 0$: → x ← (attraction)

the structuring dynamic that will be developed by the global system according to III.7. is released:

IV.1. **The splits ξ and η (and no others) split directly at the point of interaction (x) – as shown in III.6.1. – and are therefore primary splits.**

In this primary separation process, the 4 spinors of the $\Psi^{(27)}(x, \sigma_{13})$-system directly associated with the primary splits $-\xi, -\eta, +\xi, +\eta$ (see III.4. and in particular III.4.1.), namely:

IV.2. **$\Psi(x-\xi) \ldots \Psi(x-\eta) \ldots \Psi(x+\xi) \ldots \Psi(x+\eta)$ form into the separation energy-momentum necessary by I.8.1. to endow the spinor set $\Psi^{(27)}(x, \sigma_{13})$ with the structure of 4 separating elements ...}...}...}...}... .**

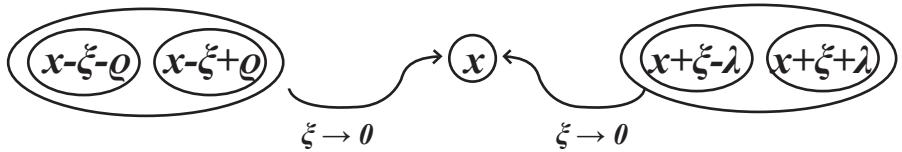
(2.2) ⟹ The binding structure works analogously:

The spinors of $\Psi^{(27)}$ ≡ III.4 at the local points $(x-\xi-\varrho), (x-\xi+\varrho), (x+\xi-\lambda), (x+\xi+\lambda)$, – thus also without an ξ-split – have a binding effect, since the splits ϱ, λ of these spinors are not directly located at the origin of interaction (x), or in other words they are not primary splits, but instead split at points in space-time $(x \pm \xi)$ that already have an ξ-split, and thus are secondary splits.

As a consequence of this, the dynamic point split process:

first, point split $\sigma \neq 0$ (here $\xi \neq 0$), then, point split $\sigma \to 0$ (here $\xi \to 0$) acts as a binding structure as $\xi \to 0$

IV.3.



(2)

IV.4.

Thus: There exists the binding energy-momentum ≡ $\overline{\Psi}(x-\xi-\varrho) \ldots \overline{\Psi}(x-\xi+\varrho) \ldots \overline{\Psi}(x+\xi-\lambda) \ldots \overline{\Psi}(x+\xi+\lambda)$

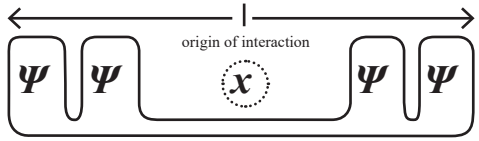
which endows the spinor set $\Psi^{(27)}(x, \varrho_{13})$ with the structure of 4 binding elements.

This causes the following dynamic system process to unfold: "First, point split $\sigma \neq 0$" and "then, point split $\sigma \to 0$".

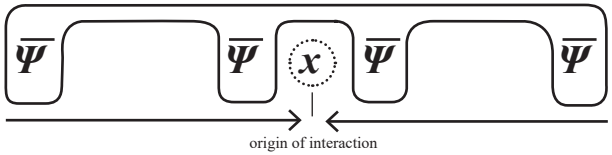
This creates the structuring required by the process: separation and binding (see III.6.2).

(2.2) ⟹

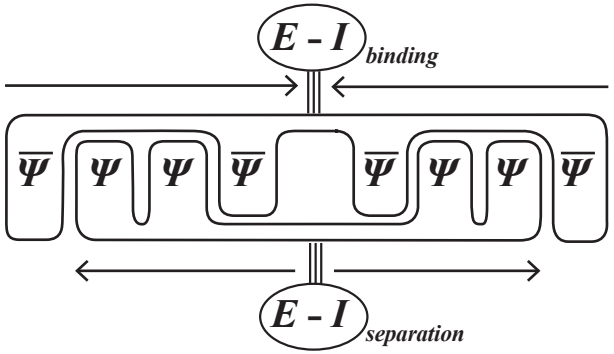
Namely as structuring separation energy-momentum ≡ $E-I_{separation}$ ≡



and structuring binding energy-momentum ≡ $E-I_{binding}$ ≡



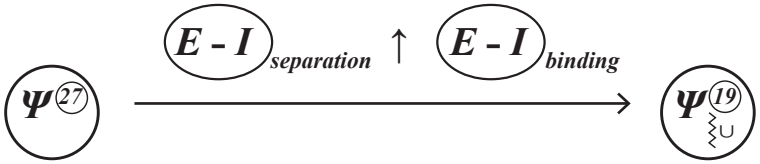
IV.5. **The structuring foundation is** $\Psi^{(8)} \equiv$



(see III.7.)

(2) **Thus: In the 3rd fundamental process, the separation and binding energy-momentum ≡ $\Psi^{(8)}$ begins to act (see I.8.1.). This action causes it to be consumed as the structuring is completed, creating the subsequently active separation and binding elements " ⦚ " and " ∪ " in the resulting $\Psi^{(19)}$-spinor set.**

IV.6.



Thus, the $\Psi^{(19)}$-spinor set , structured with the structural elements ⦚ ≡ separtion and ∪ ≡ binding in order to allow particle formation, is unequivocally generated as follows:

2.2 ⟹

IV.7.

The individual spinors that make up the $E-I_{separation}$ act with a structuring effect and are consumed by this structuring action, forming the separation energy-momentum, namely $E-I_{separation}$ which acts from within Ψ^{27}. Wherever these $E-I_{separation}$ spinors act, the

separation structure element ≷ is created.

The **binding energy-momentum** ≡ $E-I_{binding}$, works analogously, namely:

2

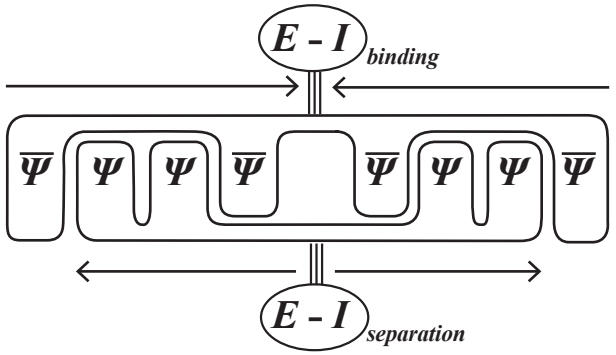
IV.8.

The individual spinors that make up the $E-I_{binding}$ act with a structuring effect and are consumed by this structuring action, forming the internally-acting binding energy-momentum $E-I_{binding}$. This binding action is what consumes them. Wherever these $E-I_{binding}$-spinors act, the das

binding structure element ∪ is created.

XIII.1. ③: The formation of the preformation structure $\Psi^{(19)}_{\cup}$ ≡ Ψ-19 (see III.4.1., III.7., V.7.):

By incorporating the structuring foundat $\Psi^{(8)}$ ≡



(see III.7.)

into the unstructured $\Psi^{(27)}(x, \sigma_{13})$: $\Psi^{(27)}$ ≡ III.4.1.

Ψ	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	Ψ	Ψ	$\overline{\Psi}$	Ψ	Ψ	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	Ψ	$\overline{\Psi}$	Ψ
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
$-\xi\ -\varrho$	$-\xi\ -\varrho$	$-\xi\ -\varrho$	$-\eta$	$-\eta$	$-\eta$	$-\xi$	$-\xi$	$-\xi$	$-\xi\ +\varrho$	$-\xi\ +\varrho$	$-\xi\ +\varrho$	0	0	0	$+\xi\ -\lambda$	$+\xi\ -\lambda$	$+\xi\ -\lambda$	$+\xi$	$+\xi$	$+\xi$	$+\eta$	$+\eta$	$+\eta$	$+\xi+\lambda$	$+\xi+\lambda$	$+\xi+\lambda$
$-\varepsilon_9$	0	$+\varepsilon_9$	$-\varepsilon_8$	0	$+\varepsilon_8$	$-\varepsilon_7$	0	$+\varepsilon_7$	$-\varepsilon_6$	0	$+\varepsilon_6$	$-\varepsilon_1$	0	$+\varepsilon_1$	$-\varepsilon_2$	0	$+\varepsilon_2$	$-\varepsilon_3$	0	$+\varepsilon_3$	$-\varepsilon_4$	0	$+\varepsilon_4$	$-\varepsilon_5$	0	$+\varepsilon_5$

③

$\Psi^{(27)}$ —[$E - I_{separation}$ ↑ $E - I_{binding}$]→ $\Psi^{(19)}_{\cup}$ **forms into the preformation structure** $\Psi^{(19)}_{\cup}$

with the dynamically created point split sets: $\Psi^{(19)}_{\cup}$

spinors: Ψ Ψ $\overline{\Psi}$ | $\overline{\Psi}$ | $\overline{\Psi}$ $\overline{\Psi}$ Ψ Ψ | Ψ $\overline{\Psi}$ Ψ | Ψ Ψ | $\overline{\Psi}$ $\overline{\Psi}$ | $\overline{\Psi}$ | $\overline{\Psi}$ Ψ Ψ

splits: $-\xi,-\varrho,-\varepsilon_9$ $-\xi,-\varrho,+\varepsilon_9$ $-\eta,-\varepsilon_8$ | $-\eta,+\varepsilon_8$ | $-\xi,-\varepsilon_7$ | $-\xi,+\varepsilon_7$ $-\xi,+\varrho,-\varepsilon_6$ $-\xi,+\varrho,+\varepsilon_6$ | $-\varepsilon_1$ $+\varepsilon_1$ | $+\xi,-\lambda,-\varepsilon_2$ $+\xi,-\lambda,+\varepsilon_2$ | $+\xi,-\varepsilon_3$ | $+\xi,+\varepsilon_3$ | $+\eta,-\varepsilon_4$ | $+\eta,+\varepsilon_4$ $+\xi,+\lambda,-\varepsilon_5$ $+\xi,+\lambda,+\varepsilon_5$

V.7.

XIII.1. ④: The formation process via the construction of the $\Psi\Psi\Psi\Psi$ and $\overline{\Psi}\,\overline{\Psi}\,\overline{\Psi}\,\overline{\Psi}$-force bosons (see V.5. - V.8)**:**

Because of the pre-established action and function of the structure foundation Ψ⑧ (IV.5.) the following holds from the very beginning of all events that unfold within the Universe:

$\Psi\ \Psi\ \Psi\ \Psi$-configurations have a separating effect ≡ repulsive

$\overline{\Psi}\ \overline{\Psi}\ \overline{\Psi}\ \overline{\Psi}$-configurations have a binding effect ≡ attractive

Furthermore: Each separation structure element ≀ in the preformation structure Ψ⑲ (V.1.) is directly surrounded by 2 $\overline{\Psi}$-spinors, i.e. $\overline{\Psi}\wr\overline{\Psi}$.

Thus, in all subsequent events (all events in the Universe until today),

④ V.5.

the spinor configuration $\overline{\Psi}\,\overline{\Psi}$ is predetermined to be repulsive – we could also say that this is "pre-established", following from the most fundamental structure act IV.5. that precedes all events in the Universe.

Also: Each binding structure element ∪ in the preformation structure Ψ⑲ (V.1.) is directly surrounded by 2 Ψ-spinors, i.e $\Psi\underset{\smile}{\Psi}$.

Thus, in all subsequent events (all events in the Universe until today),

the spinor configuration $\Psi\Psi$ is predetermined to be attractive – we could also say that this is "pre-established", following from the most fundamental structure act IV.5. that precedes all events in the Universe.

④ ⟹

These properties V.5., which are caused by the fundamental structuring into "separation" and "binding" (see IV.5.) and which therefore hold throughout the whole construction of the Universe and the whole history of the Universe from the very beginning, namely the following pre-established properties:

V.6.

$\Psi\ \Psi\ \Psi\ \Psi$	≡ separation	≡ repulsion
$\overline{\Psi}\ \overline{\Psi}\ \overline{\Psi}\ \overline{\Psi}$	≡ binding	≡ attraction
$\Psi\ \Psi$	≡ binding	≡ atteaction
$\overline{\Psi}\ \overline{\Psi}$	≡ separation	≡ repulsion

≡ fundamental force structure

④

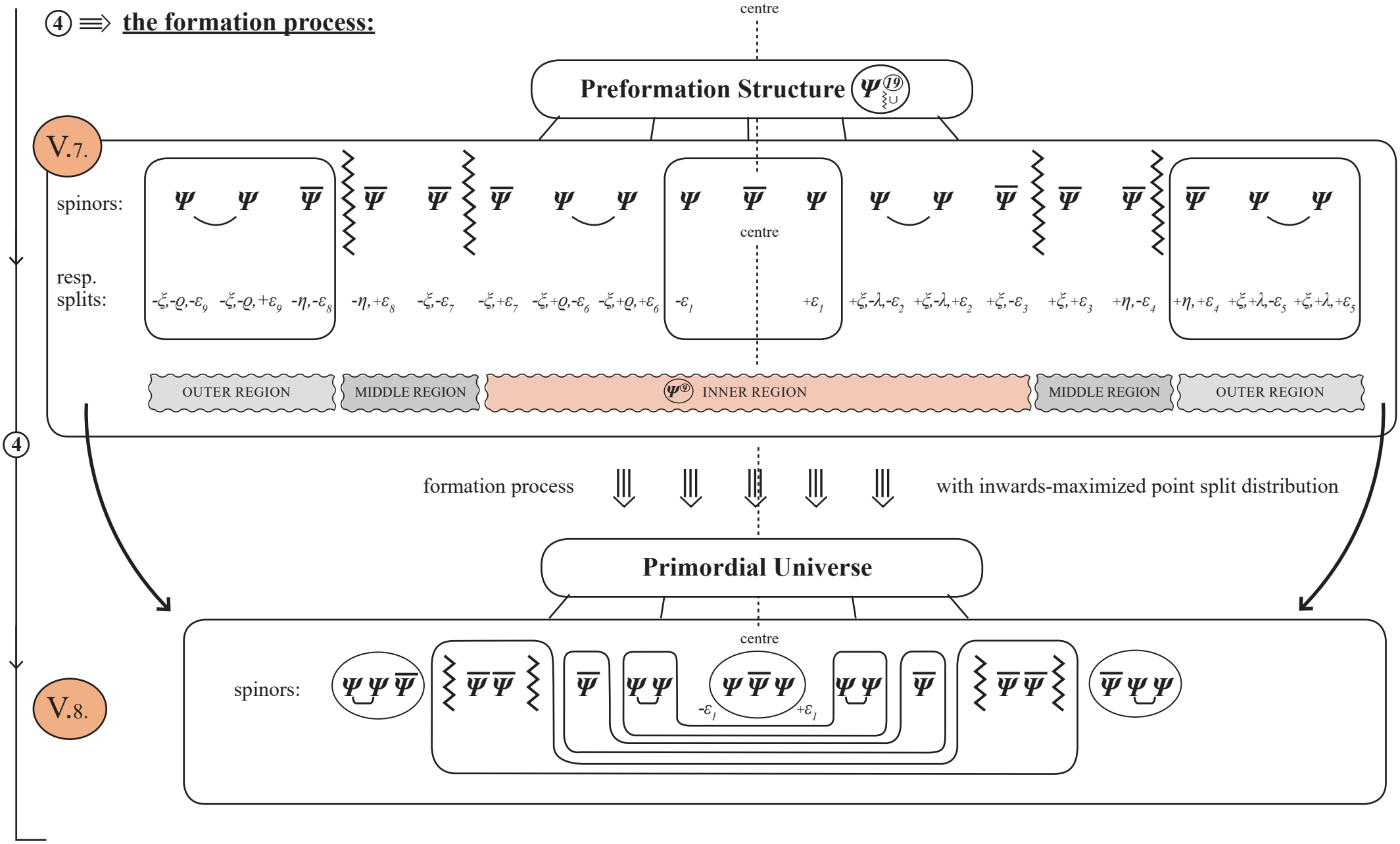
also cause the boson force structure intrinsic to this first ever Primordial Universe to form at the beginning of all events in the Universe, namely in the first creation act of the Primordial Universe.
The structure of the Primordial Universe may therefore be described as follows:

By V.3. the structure of the Primordial Universe is

from the preformation structure V.1. —there forms→ **first ever manifestation of reality ,**

together with the point split densities formed in the dynamic creation process:

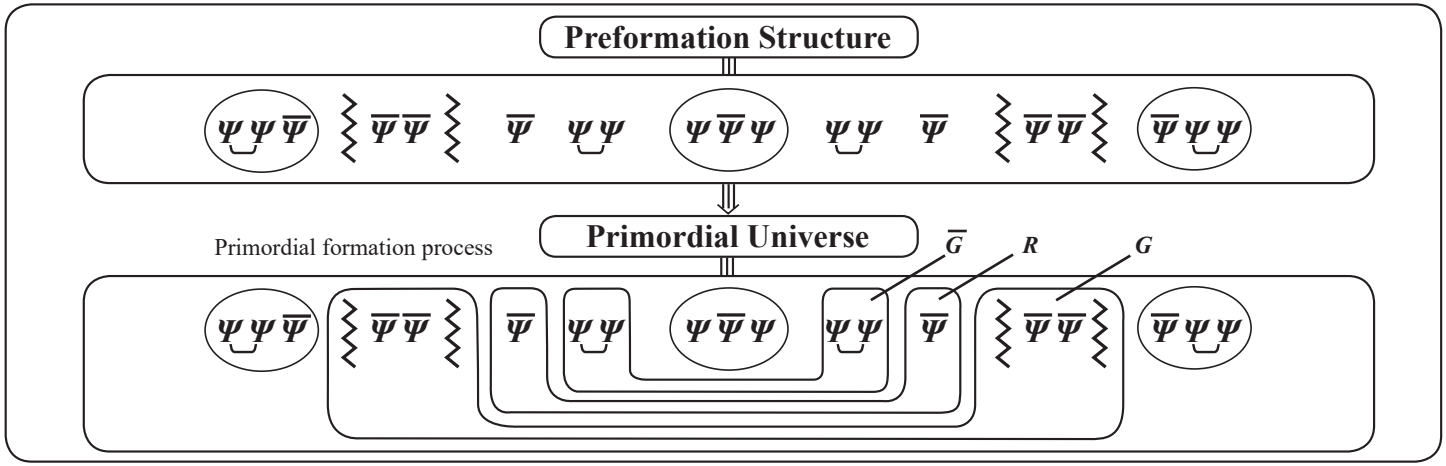
④ ⟹ **the formation process:**



XIII.1. ⑤ **: <u>The Primordial Universe before the Big Bang: The first ever manifestation of reality</u>** (see V.3., V.10., VII.1.)**:**

Since both Ψ and $\overline{\Psi}$ (see I.2.2.) are 4-component spinors in the primordial formation process, the $\Psi^{④}$ and $\overline{\Psi}^{④}$-formations are created from the preformation structure V.7. in accordance with the minimality princip I.0.3.. The rest forms as a result of the requirements associated with the global fermionic structure $\Psi^{⑲}$:

V.3.



⑤

with the 4-spinor formations

$$\overline{G} \equiv \Psi^{④} \equiv \underset{\smile}{\Psi\Psi}\,\underset{\smile}{\Psi\Psi} \equiv \Psi\Psi\Psi\Psi \overset{\text{by IV.5.}}{=\!=} \text{repulsive} \equiv \text{separating}$$

$$G \equiv \overline{\Psi}^{④} \equiv \{\overline{\Psi}\overline{\Psi}\}\{\overline{\Psi}\overline{\Psi}\} \equiv \overline{\Psi}\overline{\Psi}\overline{\Psi}\overline{\Psi} \overset{\text{by IV.5.}}{=\!=} \text{attractive} \equiv \text{binding}$$

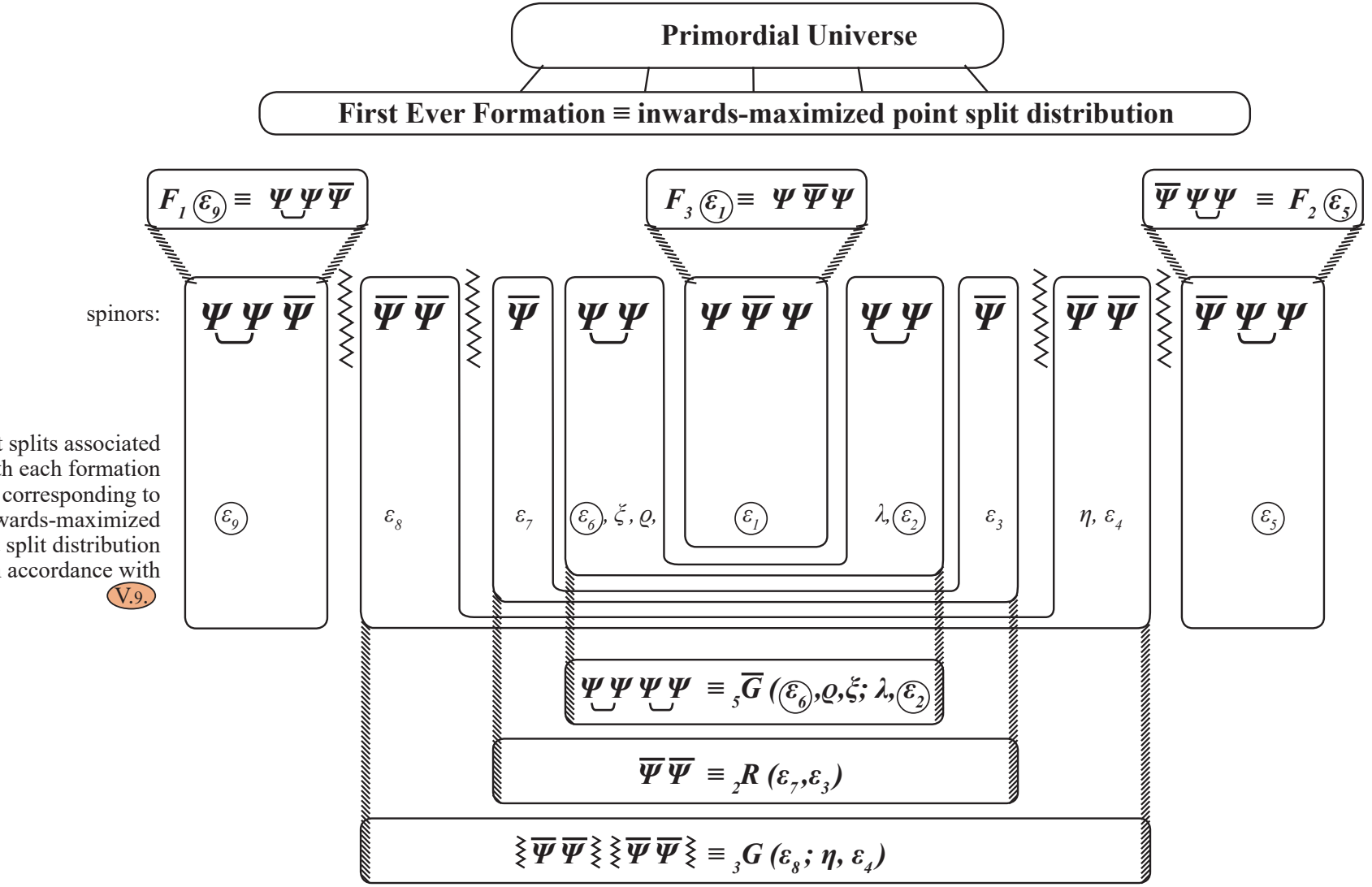
and

$$R \equiv \overline{\Psi}^{②} \equiv \overline{\Psi}\,\overline{\Psi} \equiv \overline{\Psi}\overline{\Psi} \overset{\text{by V.5.}}{=\!=} \text{repulsive}$$

This primordial formation process determines all subsequent events associated with the fundamental force structure: $\overline{\Psi}\overline{\Psi}\overline{\Psi}\overline{\Psi}$ ≡ repulsion; $\Psi\Psi\Psi\Psi$ ≡ attraction, and since the separation elements $\{$ always occur as $\overline{\Psi}\{\overline{\Psi}$: $\overline{\Psi}\overline{\Psi}$-formations are repulsive; and since the binding elements $\smile$ always occur as $\Psi\underset{\smile}{\Psi}$: $\Psi\Psi$-formations are attractive (see V.6.).

⑤ ⟹

V.10.


Primordial Universe
First Ever Formation ≡ inwards-maximized point split distribution
$F_1(\varepsilon_9) \equiv \Psi\Psi\overline{\Psi}$
$F_3(\varepsilon_1) \equiv \Psi\overline{\Psi}\Psi$
$\overline{\Psi}\Psi\Psi \equiv F_2(\varepsilon_5)$
spinors:
$\Psi\Psi\overline{\Psi}$ $\overline{\Psi}\overline{\Psi}$ $\overline{\Psi}$ $\Psi\Psi$ $\Psi\overline{\Psi}\Psi$ $\Psi\Psi$ $\overline{\Psi}$ $\overline{\Psi}\overline{\Psi}$ $\overline{\Psi}\Psi\Psi$
point splits associated with each formation entity corresponding to an inwards-maximized point split distribution in accordance with V.9.
ε_9 ε_8 ε_7 $\varepsilon_6, \xi, \varrho,$ ε_1 λ, ε_2 ε_3 η, ε_4 ε_5
$\Psi\Psi\Psi\Psi \equiv {}_5\overline{G}(\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2)$
$\overline{\Psi}\overline{\Psi} \equiv {}_2R(\varepsilon_7, \varepsilon_3)$
$\overline{\Psi}\overline{\Psi}\ \overline{\Psi}\overline{\Psi} \equiv {}_3G(\varepsilon_8; \eta, \varepsilon_4)$

⑤ $\Longrightarrow$ **As a result of the inwards-maximized point split distribution (see V.8.) the inner-structural composition of each individual elementary particle of the Primordial Universe satisfies:**

VII.1.

⑤

The 3 most elementary fermions:

$F_1(\varepsilon_9) \equiv \underset{\smile}{\Psi\Psi}\overline{\Psi}(\varepsilon_9) \equiv$ 1-split object $\equiv$ (by VI.3.1.) **massless ≡ named: neutrino$_1$ ≡ ν_1**

$F_2(\varepsilon_5) \equiv \overline{\Psi}\underset{\smile}{\Psi\Psi}(\varepsilon_5) \equiv$ 1-split object $\equiv$ **massless ≡ named: neutrino$_2$ ≡ ν_2**

$F_3(\varepsilon_1) \equiv \Psi\overline{\Psi}\Psi(\varepsilon_1) \equiv$ 1-split object $\equiv$ **massless ≡ named: neutrino$_3$ ≡ ν_3**

The 3 most elementary bosons:

$_5\overline{G}(\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2) \equiv \underset{\smile}{\Psi\Psi}\,\_\,\underset{\smile}{\Psi\Psi}(\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2) \equiv$ 5-split object $\equiv$ (by V.6.,VI.3.) **massive, strongly repulsive**
≡ named: anti-gravitational force

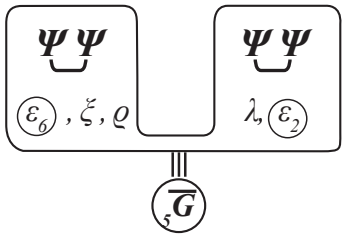
$_2R(\varepsilon_7, \varepsilon_3) \equiv \overline{\Psi}\,\_\,\overline{\Psi}(\varepsilon_7, \varepsilon_3) \equiv$ 2-split object ≡ **massive, repulsive**
≡ named: repulsion force

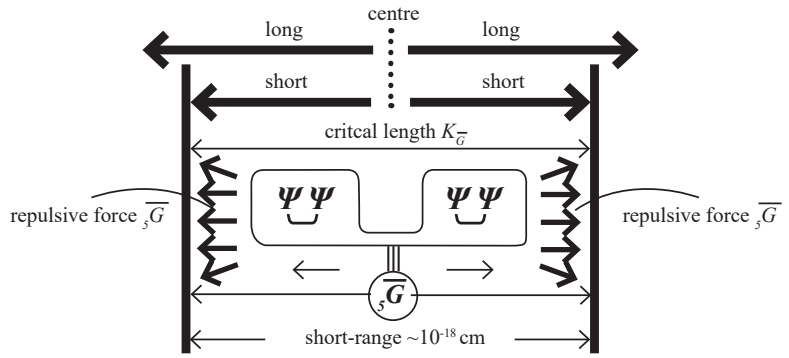
$_3G(\varepsilon_8; \eta, \varepsilon_4) \equiv \overline{\Psi}\overline{\Psi}\,\_\,\overline{\Psi}\overline{\Psi}(\varepsilon_8; \eta, \varepsilon_4) \equiv$ 3-split object ≡ **massive, weakly attractive**
≡ named: gravitational force, not yet the long-range 1-split gravitational force G_1

XIII.1. ⑥ **: <u>The origin and beginning of the Big Bang</u>** (see VIII.3., VIII.6., XI.2., XI.3.)**:**

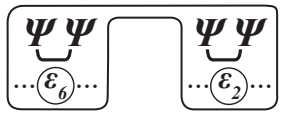
The absolutely dominant force in the Primordial Universe (before the Big Bang) is the first ever manifestation of reality, namely the most extremely strongly repulsive, highly massive and unstable force boson $_5\overline{G}\,(\varepsilon_6, \varrho\,, \xi; \lambda, \varepsilon_2)$ (see V.3.):

VIII.3.

with $_5G \equiv$ 

$\Longrightarrow$ 

⑥ **Due to the most extremely strong intrinsic repulsion away from the centre associated with it (see V.6., VII.7.), the extremely massive – and therefore extremely short-range – gradual repulsive expansion of the repulsive anti-gravitational force $_5\overline{G}$ necessarily reaches the critical length K (~10^{-18} cm), beyond which the force $_5\overline{G}$ cannot extend due to its extremely high mass structure (≡ short-range):**

The mass structure of $_5\overline{G} \equiv$ 

$\equiv\ _5\overline{G}\,(\varepsilon_6, \varrho\,, \xi; \lambda, \varepsilon_2)$ **is concretely and inevitably associated with and "imprinted" onto the spinor configuration** $\overline{G} \equiv$ 

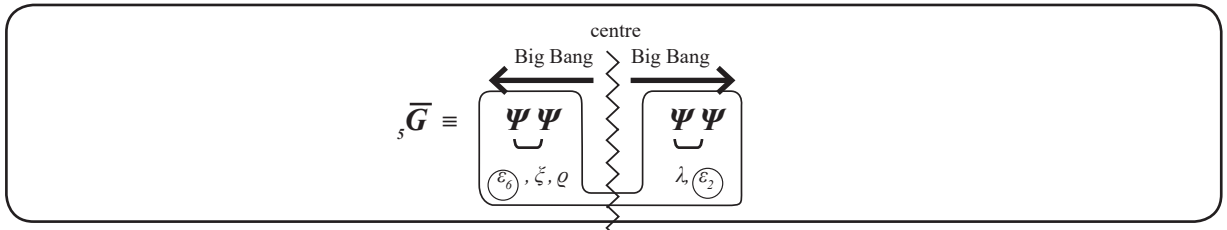
by the 2 circled ε_6**- and** ε_2**-splits.**

Hence: Due to the composition of its basis $_5\overline{G} \equiv$ 

inevitably contains at least the splits ε_6 **and** ε_2 **and is therefore necessarily a massive force and so is inevitably limited to the short region within the critical length** K_G **in VIII.3.**

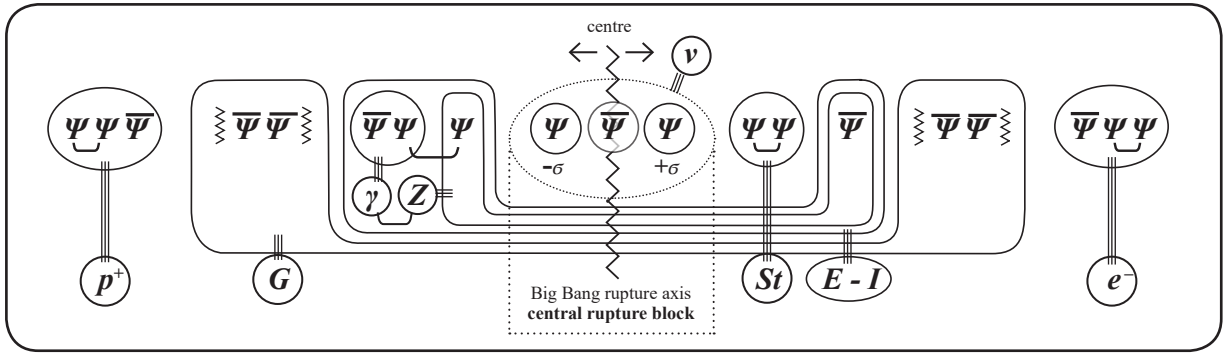
⑥ ⟹ **This limitation to the critical length K naturally works against the intrinsically predetermined, most extremely strong repulsive anti-gravitational force** ${}_5\overline{G} \equiv \underbrace{\Psi\Psi}\ \underbrace{\Psi\Psi}$ **by VIII.3., which means that there must be some "liberation act" – figuratively speaking – i.e. a "rupture", namely the Big Bang around 13.8 billion years ago.**
The instability of ${}_5\overline{G}$ **leads to the fundamental Big Bang process:**

VIII.6.



resulting in the following post-Big Bang formation with an outwards-maximized point split distribution (see XI.1.)

6 XI.2.



Therefore, as described in XI.2. and VIII.10., there forms a central rupture axis ←⋮→ in the Big Bang, effectively a central restructuring particle made fragile by the Big Bang ←⋮→ $-\sigma$ $+\sigma$, the fragile restructured neutrino:

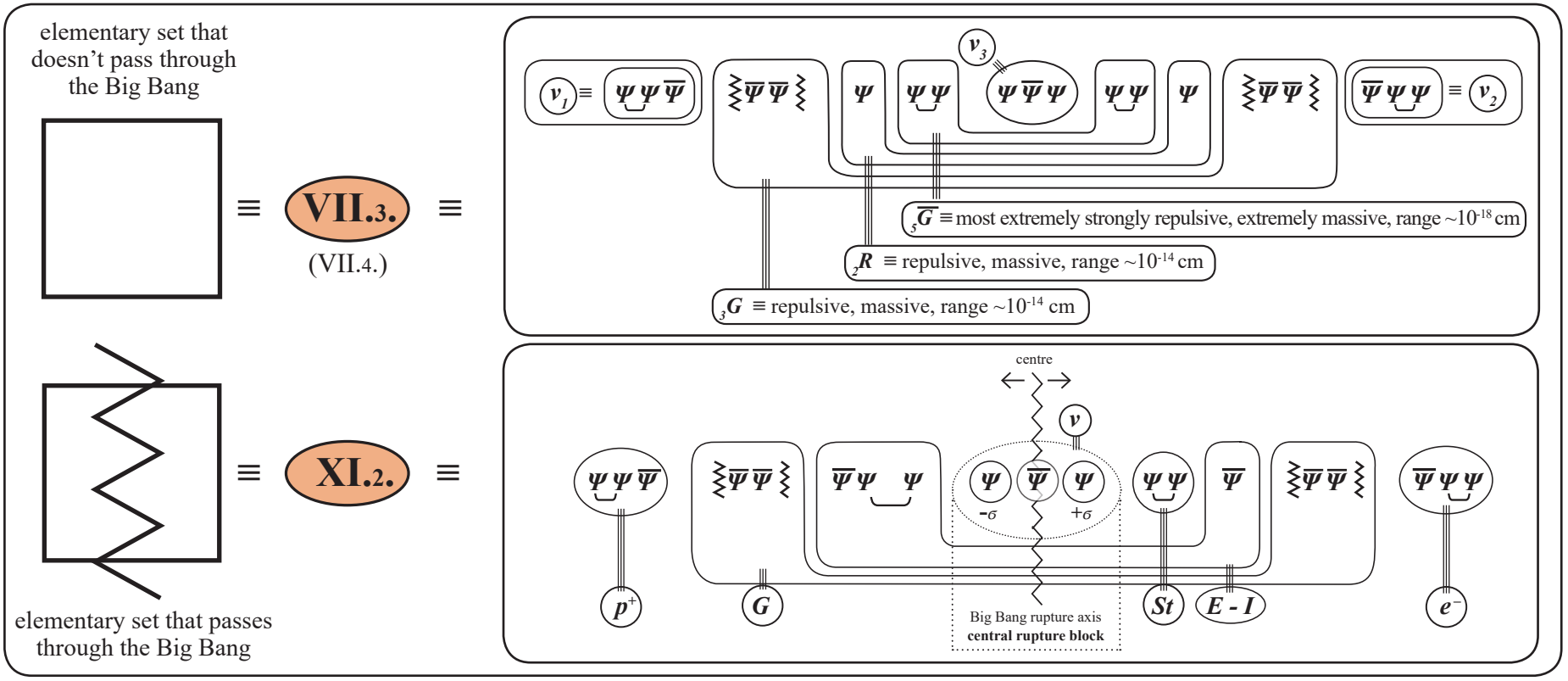
XI.3.

$\nu \equiv \underbrace{\Psi(x-\sigma)}\ \underbrace{\overrightarrow{\overline{\Psi}(x)}}\ \underbrace{\Psi(x+\sigma)}$ **with the Big Bang rupture axis ⋮ running through its centre. Thus, the 3 basis spinors of the "fragile neutrino" are individualized by the mini-Big Bang split** $\sigma \neq 0$**, and as a result of this individualization each becomes the starting point of a new, independent dynamic construction process** $\Psi \rightarrow \Psi^{(19)}$.

XIII.1. (7.1): The Big Bang production cascade (see XI.22., XI.23.):

We introduce the following symbols in order to more easily represent the structures involved in the chain reaction process of this most colossal reproduction cascade:

(7) XI.22.



7.1 ⟹ XI.23.

Big Bang Production Cascade

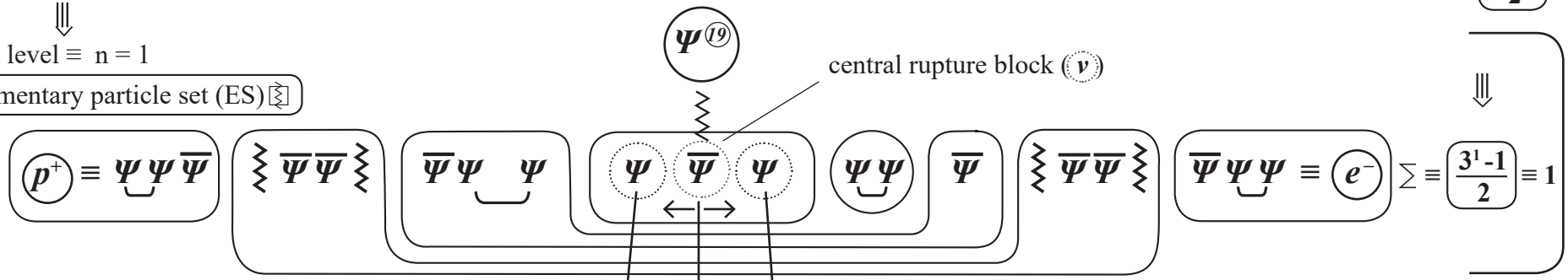
n-th production level, elementary sets produced: $s(n) \equiv 3^{n-1}$

number of elementary particle sets produced so far ⊰ $\sum \equiv \frac{3^n - 1}{2}$

1st production level ≡ n = 1

s(1)≡ ① elementary particle set (ES) ⊰

≡ XI.2.



$\sum \equiv \frac{3^1 - 1}{2} \equiv 1$

2nd production level ≡ n = 2

$s(2) \equiv 3^{(2-1)} \equiv$ ③ ES ⊰

$\sum \equiv \frac{3^2 - 1}{2} \equiv 4$

3rd production level ≡ n = 3

$s(3) \equiv 3^{(3-1)} \equiv$ ⑨ ES ⊰

$\sum \equiv \frac{3^3 - 1}{2} \equiv 13$

4th production level ≡ n = 4

$s(4) \equiv 3^{(4-1)} \equiv$ ㉗ ES ⊰

$\sum \equiv \frac{3^4 - 1}{2} \equiv 40$

⋮

(n_f-1)-th production level ≡ last-but-one production level ≡ last iteration of the Big Bang, which produces ES ⊰:

$s(n_f\text{-}1) \equiv 3^{(n_f-2)}$ ES ⊰ and from which the last (final) production level n_f is created.

$\sum \equiv \frac{3^{(n_f-1)} - 1}{2}$

--------- END OF BIG BANG --------- END OF BIG BANG --------- END OF BIG BANG --------- END OF BIG BANG ---------

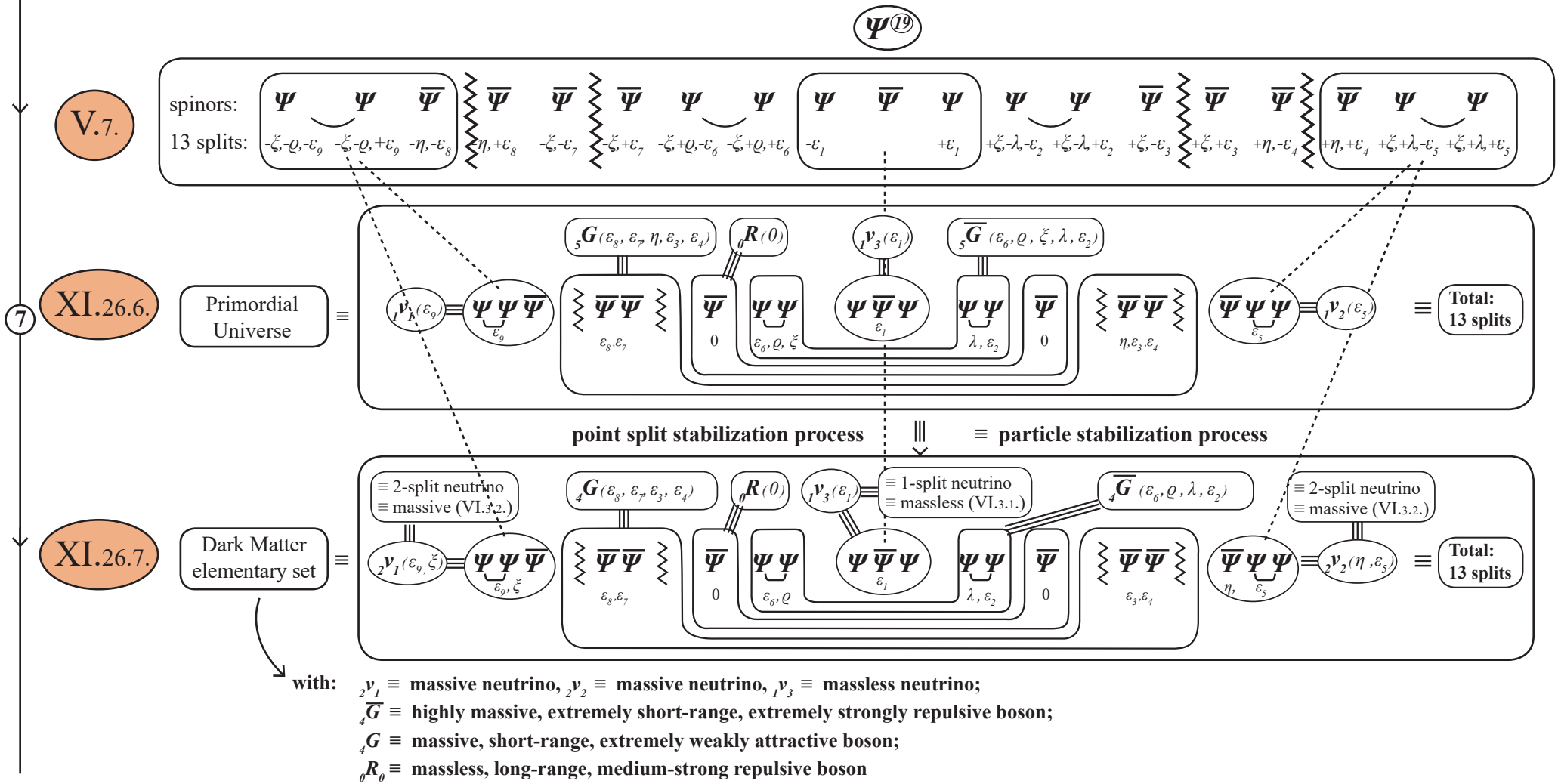
$n_f \equiv$ final production level created from the (n_f- 1)-th and last iteration of the Big Bang, then end of the Big Bang.

$s(n_f) \equiv 3^{(n_f-1)}$ ES □ ≡ production at the final level

XIII.1. (7.2): The formation process of the Universe ($\frac{2}{3}$ Dark Matter, $\frac{1}{3}$ Normal Matter) after the Big Bang:
(see V.7., XI.2., XI.26.):

XIII.1. (7.2.1): Component (1) ≡ Dark Matter ≡ 66.6 % of the Earliest Universe ≡ $3^{(n_f-1)}$-□-elementary sets

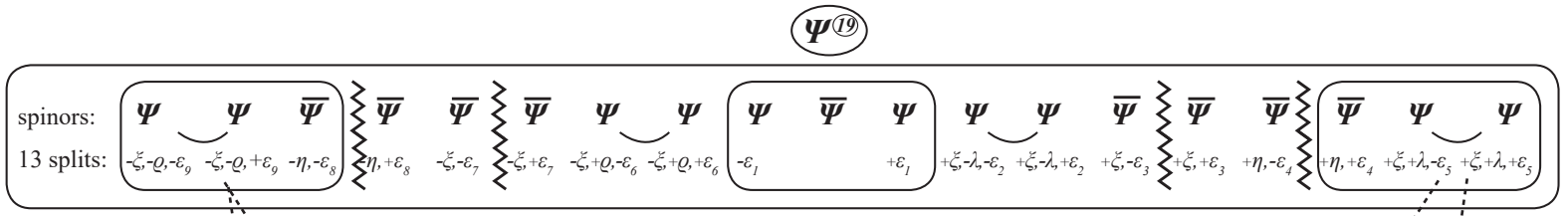
□ --particle formation process (Dark Matter) at the end of the Big Bang cascade



XIII.1. (7.2): The formation process of the Universe ($\frac{2}{3}$ Dark Matter, $\frac{1}{3}$ Normal Matter) after the Big Bang:

XIII.1. (7.2.2): Compontent (2) ≡ Normal Matter ≡ 33.3 % of the Earliest Universe ≡ $\frac{3^n-1}{2}$-⧚-elementary sets (see XI.2.)

V.7.



and from this, with an inwards-maximized point split distribution, the first formation process:

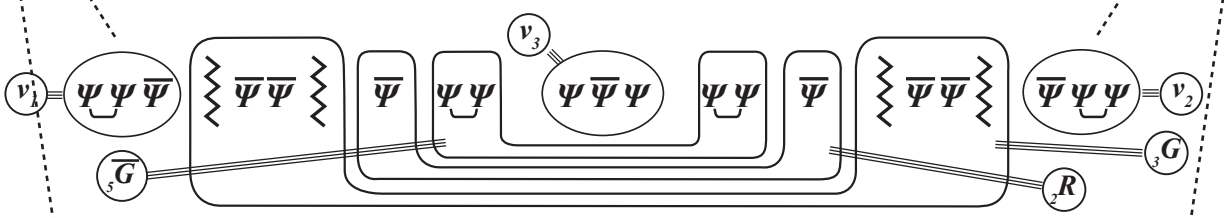
The formation of the unstable first ever Primordial Universe before the Big Bang:

$\Psi\Psi \quad \Psi\Psi \equiv {}_5\overline{G}\,(\varepsilon_8, \varepsilon_7, \eta, \varepsilon_3, \varepsilon_4)$

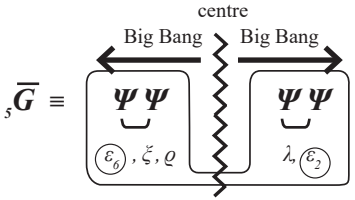
$\overline{\Psi}\,\overline{\Psi} \equiv {}_2R\,(\varepsilon_7, \varepsilon_3)$

$\overline{\Psi}\,\overline{\Psi}\,\overline{\Psi}\,\overline{\Psi} \equiv {}_3G\,(\varepsilon_8, \eta, \varepsilon_4)$

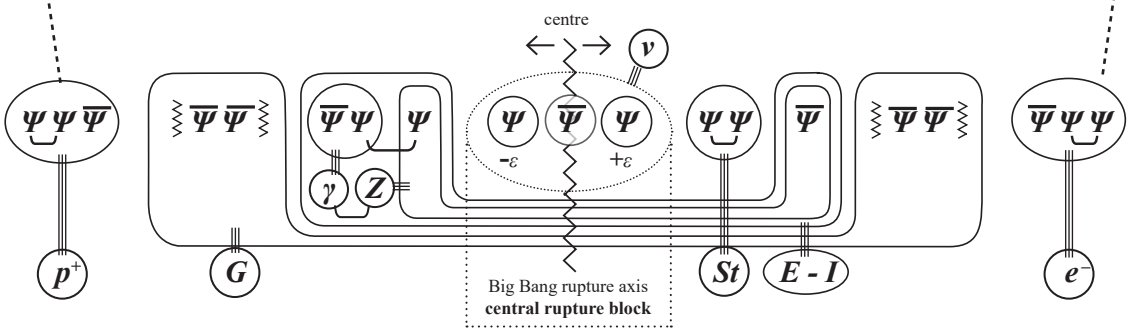
as well as the 3 neutrinos ν_1, ν_2, ν_3



The instability of ${}_5G$ leads to the Big Bang, thus causing an outwards-maximized point split distribution, resulting in the post-Big Bang formation



XI.2. **resulting in the post-Big Bang formation::**



with:

${}_2\nu_1$ ≡ massive neutrino, ${}_2\nu_2$ ≡ massive neutrino, ${}_1\nu_3$ ≡ massless neutrino;
${}_4G$ ≡ highly massive, extremely short-range, extremely strongly repulsive boson;
${}_4G$ ≡ massive, short-range, extremely weakly attractive boson;
${}_0R_0$ ≡ massless, long-range, medium-strong repulsive boson

XIII.1. (7.3): The construction of the Universe after the Big Bang (see XI.36.):

XI.36. The 2 components $(\frac{2}{3}, \frac{1}{3})$ of the Entire Universe directly after the Big Bang, with the corresponding (6, 6) ≡ 12 elementary particles

Dark Matter

Component ① ≡ 66.6 %		Inner-Structural Particle Composition		by V.,VI.	Mass/Charge	Force Structure	Range	Found?
neutrino$_1$	$({}_2\nu_1)$ ≡	$\Psi\Psi\overline{\Psi}$ (ε_9, ξ)	≡ 2-split fermion	≡⟩	massive (mass ≠ 0)			yes
neutrino$_2$	$({}_2\nu_2)$ ≡	$\overline{\Psi}\Psi\Psi$ (η, ε_5)	≡ 2-split fermion	≡⟩	massive (mass ≠ 0)			yes
neutrino$_3$	$({}_1\nu_3)$ ≡	$\Psi\overline{\Psi}\Psi$ (ε_1)	≡ 1-split fermion	≡⟩	massless			yes
anti-gravitational boson	$({}_4\overline{G})$ ≡	$\Psi\Psi$ $\Psi\Psi$ $(\varepsilon_6, \varrho; \lambda, \varepsilon_2)$	≡ 4-split boson	≡⟩	extremly high mass, charge $\overline{q}_0$	most extremely strongly repulsive	10^{-17} cm	not yet
repulsive boson	$({}_0R_0)$ ≡	$\overline{\Psi}$ $\overline{\Psi}$ (0)	≡ 0-split boson	≡⟩	massless	repulsive	long	not yet
gravitational boson	$({}_4G)$ ≡	$\{\overline{\Psi}\overline{\Psi}\}$ $\{\overline{\Psi}\overline{\Psi}\}$ $(\varepsilon_8, \varepsilon_7, \varepsilon_3, \varepsilon_4)$	≡ 4-split boson	≡⟩	massive, charge q_0	most extremely weakly attractive	10^{-15} cm	not yet
as well as the end products created from the annihilation of $({}_4\overline{G}, {}_4G)$, including the split release products thus created, and the Dark Energy created from these and other annihilation processes.								not yet

Normal Matter/Antimatter

Component ② ≡ 33.3 %		Inner-Structural Particle Composition		by V.,VI.	Mass/Charge	Force Structure	Range	Found?
proton (antiproton*)	$(p^+)(\overline{p})$ ≡	$\Psi\Psi\overline{\Psi}$ $(\varepsilon_9, \xi, \varrho, \varepsilon_8)$	≡ 4-split fermion	≡⟩	higher mass, charge ⊕ (⊖)			yes
electron (positron*)	$(e^+)(e^-)$ ≡	$\overline{\Psi}\Psi\Psi$ $(\varepsilon_4, \eta, \varepsilon_5)$	≡ 3-split fermion	≡⟩	low mass, charge ⊖ (⊕)			yes
neutrino	(ν) ≡	$\Psi\overline{\Psi}\Psi$ (ε_1)	≡ 1-split fermion	≡⟩	masless			yes
strong force	(St) ≡	$\Psi\Psi$ (λ, ε_2)	≡ 2-split boson	≡⟩	massive, uncharged	strongly attractive	10^{-13} cm	yes
energy-momentum	$(E-I)$ ≡	$\overline{\Psi}\Psi$ $\Psi\overline{\Psi}$ $(\varepsilon_6, \varepsilon_3)$	≡ 2-split boson	≡⟩				yes
partial decomposition into $(\gamma)(Z)$	≡	$\overline{\Psi}\Psi$ $\Psi\overline{\Psi}$ $(\varepsilon_6, \varepsilon_3)$						yes
electromag. force	(γ) ≡	$\overline{\Psi}\Psi$ (0 split)	≡ 0-split boson	≡⟩	massless	medium strong	long	yes
weak force	(Z) ≡	$\Psi\overline{\Psi}$ $(\varepsilon_6, \varepsilon_3)$	≡ 2-split boson	≡⟩	massive, uncharged	weak	10^{-15} cm	yes
gravitation	(G) ≡	$\{\overline{\Psi}\overline{\Psi}\}$ $\{\overline{\Psi}\overline{\Psi}\}$ (ε_7)	≡ 1-split boson	≡⟩	massless	most extremely weakly attractive	long	yes
as well as the annihilation end products $((e^+, e^-, p^+, p^-))$, see XI.29.								yes

*** For the detailed point split distributions of antimatter particles, see XI.28.**

In the exact same way that the elementary particles of Normal Matter ($\overbrace{p^+, e^-, \nu}^{\text{fermions}}$; $\overbrace{St, \gamma, Z, G}^{\text{bosons}}$) form the fundamental atom of Normal Matter (hydrogen atom) given the right energy boundary conditions, from which the entire spectrum of Normal Matter atoms forms given corresponding energy boundary conditions, according to the well-understood field of atomic physics,

the elementary particles of Dark Matter ($\overbrace{{}_4\overline{G}, {}_4G, {}_0R;}^{\text{bosons}}$ $\overbrace{{}_2\nu_1, {}_2\nu_2, {}_1\nu_3}^{\text{fermions}}$) also form into the fundamental atom of Dark Matter (referred to here as the "D-atom") given the right energy boundary conditions. The most important component of this fundamental atom of Dark Matter (D-atom) is the

-structure entity, which consists of the two Dark Matter elementary particles ${}_4\overline{G}, {}_4G$:

7

${}_4\overline{G}$ ≡ extremely high mass, most extremely strongly repulsive, extremely short-range (10^{-17} cm), anti-gravitational boson with charge $\overline{q}_0$

${}_4G$ ≡ massive, extremely weakly attractive, short-range (10^{-15} cm) gravitational boson with charge q_0

where $\overline{q}$, q "naturally" does not refer to electrical charge, but rather gravitational charge, which only exists in Dark Matter and which must be investigated by experimental Dark Matter research in order to discover experimental classifications and simplifications.

Thus: ${}_4\overline{G}$ has a force range of only 10^{-17} cm. Outside of this force range, the anti-gravitational force does not act.

${}_4G$ has a force range of only 10^{-15} cm. Within this force range, the gravitational force acts attractively.

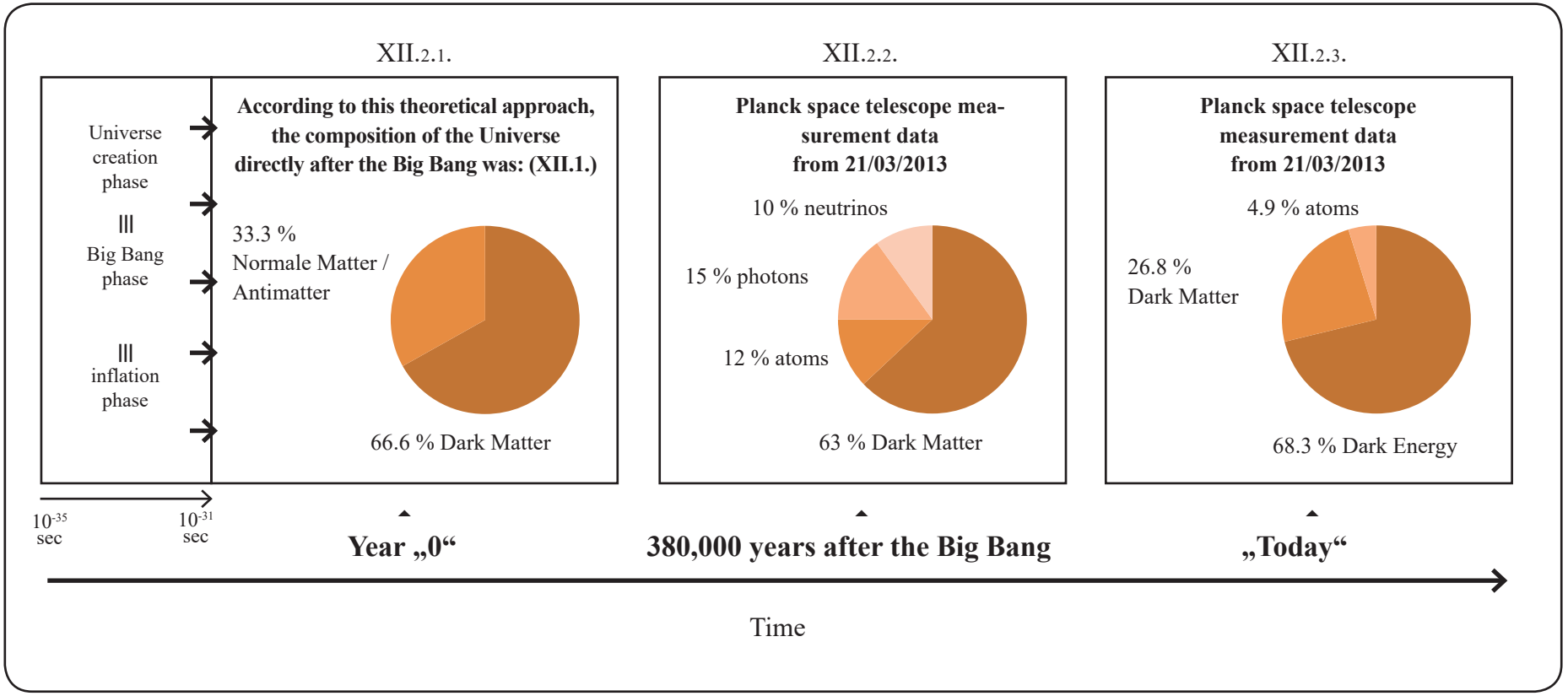
This leads to the construction of the extremely highly massive charge-neutral $\overline{q}_0 + q_0 \equiv 0$ -structure entity  , from which the fundamental atom of Dark Matter (D-atom) then develops together with other Dark Matter elementary particles (${}_0R; {}_2\nu_1, {}_2\nu_2, {}_1\nu_3$), and consequently, given the right energy boundary conditions, the full spectrum of all Dark Matter atoms. This explains the high fraction of mass attributable to Dark Matter in space telescope measurements.

XIII.1. ⑧: <u>The development process of the Universe from the Big Bang until Today</u> (see XII.2.-XII.4., XII.9.-XII.18., XII.42.)**:**

- **The annihilation of Dark Matter and Normal Matter**
- **The creation of Dark Energy with the coupled construction of expanding 4-dimensional space-time**

XIII.1. ⑧.1 : <u>Overall</u>:

The composition of matter has drastically changed throughout the development of the Universe from the Big Bang until Today:



(8.1) ⟹

To better understand these results (XII.2.), esp. (XII.2.1.) and (XII.2.2.), note that:

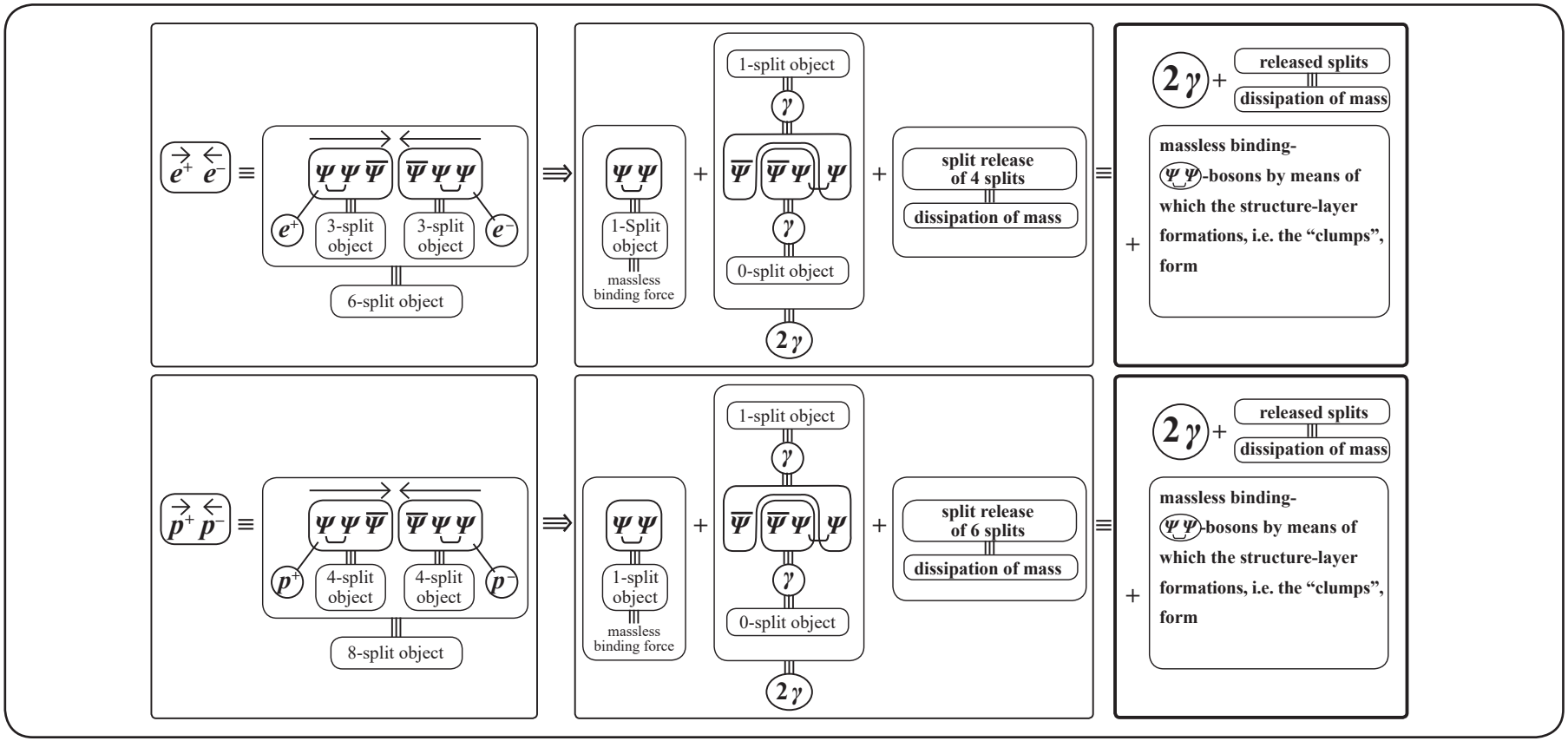
According to the theoretical approach adopted here (UEA, (XI.1.) → (XI.36.), there were so-called annihilation processes ($e^+ e^- \to 2\gamma + \ldots$) and ($p^+ p^- \to 2\gamma + \ldots$) between matter and antimatter (see (XI.29.)) directly after the Big Bang in the 33.3% Normal Matter/Antimatter segment of the Universe (see (XI.27.), (XI.28.)):

8

XI.29.

|||

XII.3.



(8.1) ⟹

Because of these type XII.3. annihilation processes, the 33.3% Normal Matter/Antimatter segment of the Universe in XII.2.1., had the following composition at the moment of decoupling 380,000 years after the Big Bang, by the Planck space telescope measurements XII.2.2.:

33.3% Normal Matter/Antimatter segment

33.3 % ≅ 12% atoms, 15% photons, 6.3% neutrinos

XII.4.1.

The ~3.6% neutrinos missing from the Planck measurements are found in the Dark Matter part of the Planck measurements, since, according to this theoretical approach (see UEA XI.36.),

(8)

as well as the bosons $({}_0R;\ {}_4\overline{G};\ {}_4G)$, the 66.6 % Dark Matter segment also contains the 3 neutrinos $({}_2\nu_1);\ ({}_2\nu_2);\ ({}_1\nu_3)$.

XII.4.2.

This means: The value predicted by the present theoretical approach XII.2.1. are consistent with the Planck measurements XII.2.2..
This also means: The Planck measurements confirm the predictions of this theory.

(8.1) $\Longrightarrow$ Thus:

For each elementary particle set, the Universe is fundamentally, exclusively, and inevitably (for details, see EAU) constructed by the construction process $D^{(13)}_{13\ \text{splits}}\ \Psi(x) \equiv \Psi^{(27)}(x, 13\ \text{splits})$ see EAU, III.1. → III.4. (in particular I.2.), i.e. after the necessary and intrinsic creation of the structuring $\Psi^{(8)}$ (see IV.5.), the preformation structure forms as $\Psi^{(19)}_{\text{U}}(x, 13\ \text{splits}) \equiv \Psi$-19 $\equiv$ inner-structural composition and order system of the Universe $\equiv$ Universe Code Ψ-19. This happens subject to:

XII.11.

The highest conservation principle, which must be satisfied by every process in the Universe, is that there must be (13) splits for each created elementary set, applicable to every individual Dark Matter elementary set and every individual Normal Matter/Antimatter elementary set.

(8)

This split conservation number (13) must also be satisfied by the annihilation processes of Dark Matter, as well as those of Normal Matter/Antimatter. These (13) dynamically created splits per elementary set are:

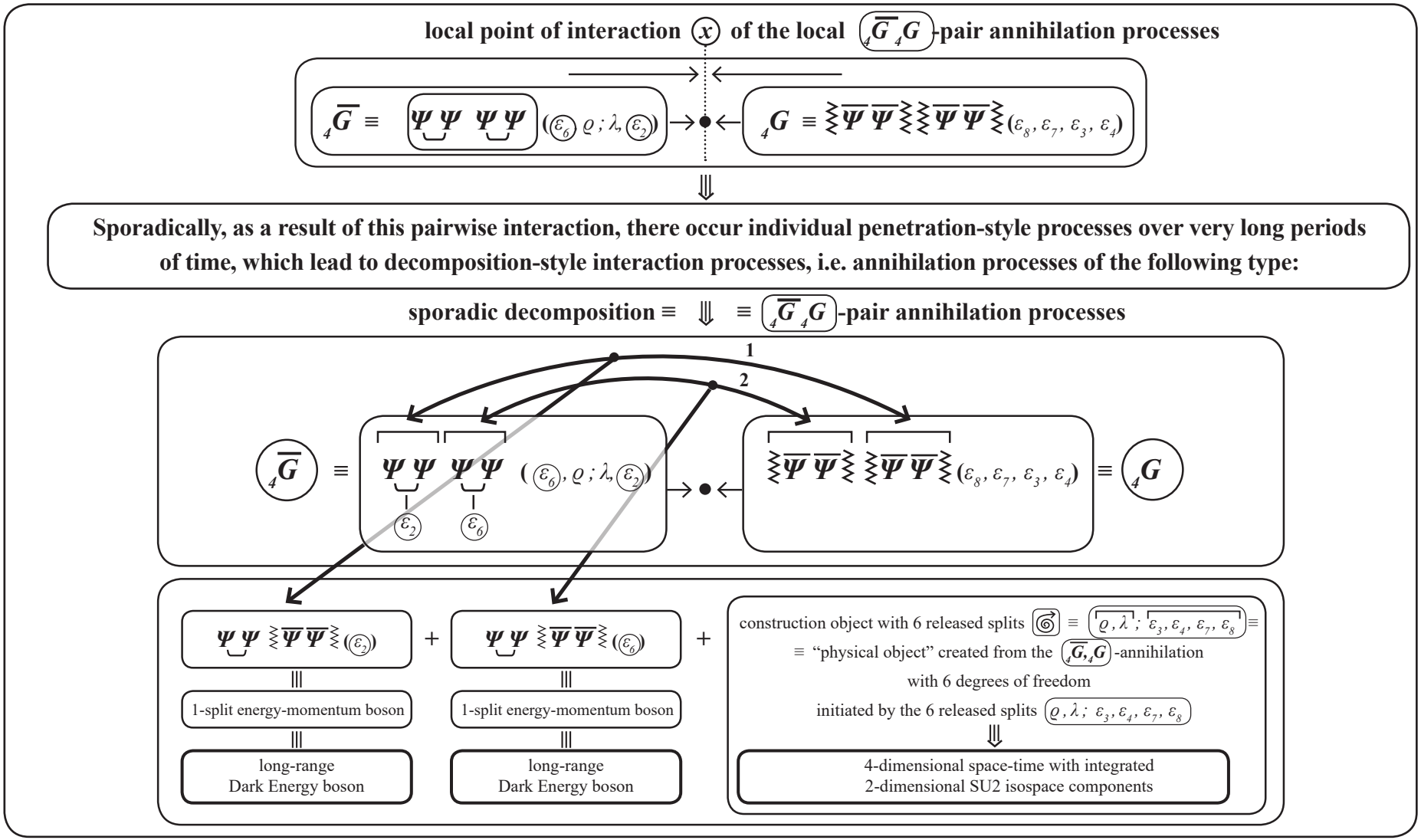
$\xi, \varrho, \lambda, \eta ; \varepsilon_1, \varepsilon_2, \varepsilon_3, \varepsilon_4, \varepsilon_5, \varepsilon_6, \varepsilon_7, \varepsilon_8, \varepsilon_9$ **(see e.g. EAU; V.7., XI.36.)**

Thus: In every interaction and transformation process of any single event in the Universe, the total number of split must be (13) in each elementary set. No matter what this implies. Hence: This principle of split conservation must also be satisfied by annihilation processes.

XIII.1. (8.2): <u>The annihilation processes of Dark Matter</u> and conversely the creation of Dark Energy with the coupled creation of expanding 4-dimensional space-time elementary structure entities.

XII.9.

8



(8.2) ⟹ From XII.9., it follows: The local interaction point $x = \bullet$ of the ${}_4\overline{G}\ {}_4G$-pair annihilation is "straightened out" by the expanding (4+2)-split release – due to the annihilation of mass – or in other words "opened up".

Thus: Starting from the local interaction point $x = \bullet$, due to the -split release from the annihilation processes XII.12., the following happens:

XII.13.

-split release act ≡ space straightening act ≡ space opening act ≡ -space expansion act

In EAU, VI.3.2., it was shown that point curvature is created by split clustering processes with split densities ≥ 2, and that this point curvature creates mass, and therefore the curvature of space is related to mass. If we symbolically write split clustering ≡ point curvature as , and the inverse act, namely split release ≡ point straightening, as , then we see that:

(8)

XII.14.

- **mass is generated at the mass point ⊙ by split densities ≥ 2, i.e. , and**
- **4-dimensional space-time structure entities are created by split releases ≥ 4, i.e. .**

It follows that:

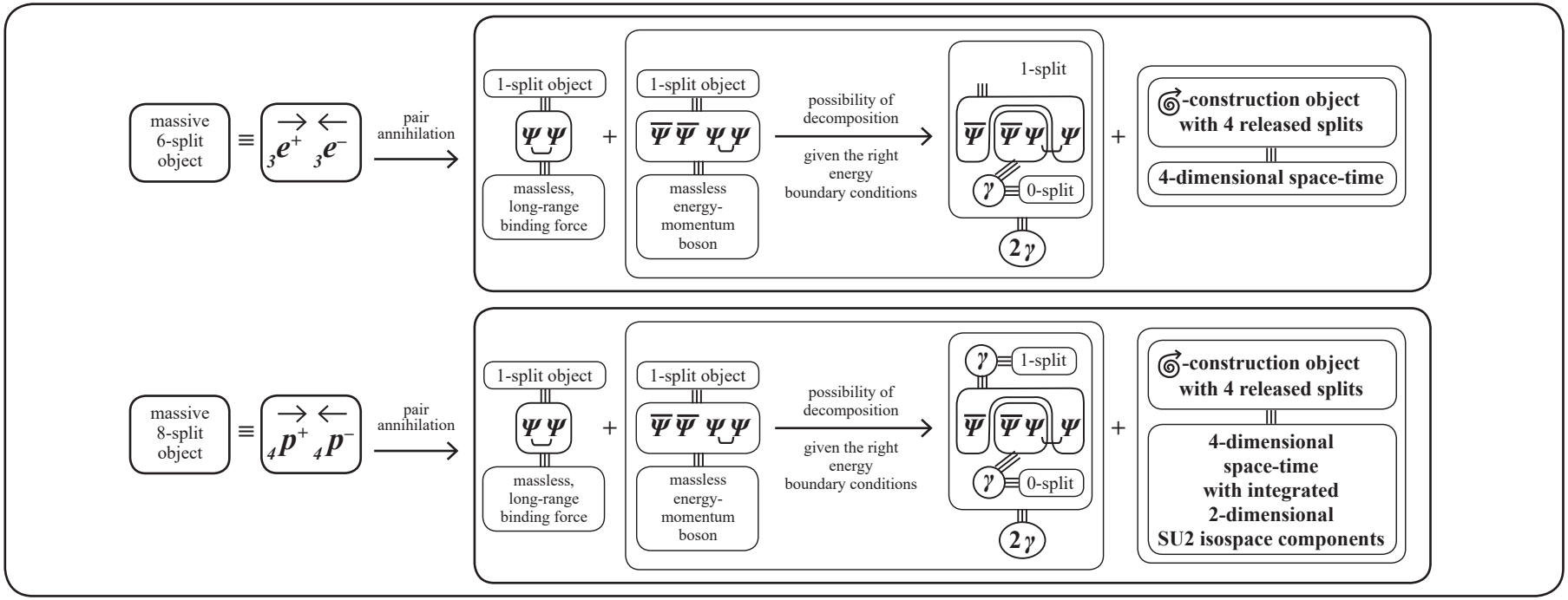
XII.15.

- **space curvature ≡ ≡ mass constr. ≡ clustering of space ≡** coupled with the construction of Normal Matter/Antimatter particles and Dark Matter particles
- **space straightening ≡ ≡ mass deconstr. ≡ constr. of expanding space ≡** coupled with the creation of massless Dark Energy bosons

XIII.1. (8.3): <u>The annihilation processes of Normal Matter/Antimatter</u> and conversely the creation of Dark Energy with the coupled creation of expanding 4-dimensional space-time elementary structure entities.

The same principle as for Dark Matter annihilation occurs with the annihilation processes of Normal Matter/Antimatter:

XII.17. (8)

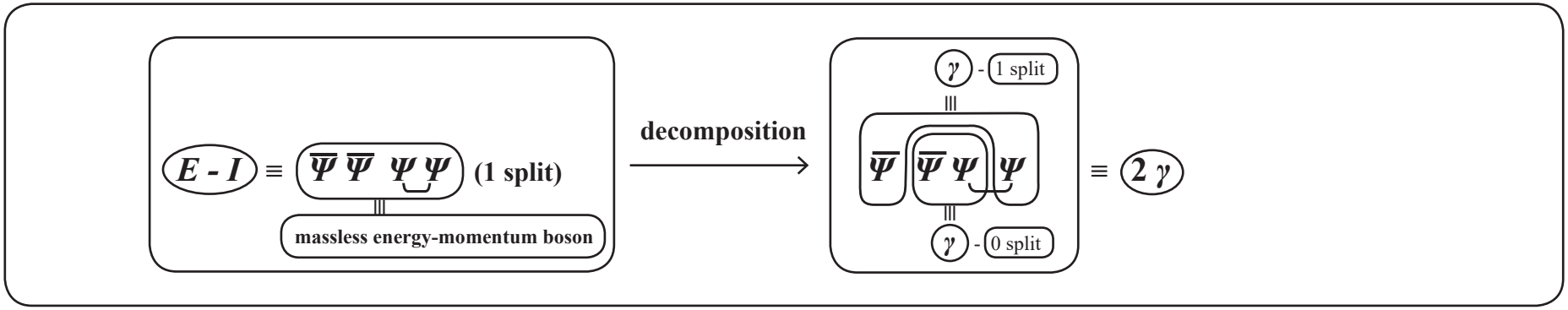


The annihilation processes of Normal Matter/Antimatter lead to the creation of massless energy-momentum bosons (*E - I*), which, given the right energy boundary conditions, decompose into bosons:

8.3 $\Rightarrow$

The annihilation processes of Normal Matter/Antimatter lead to the creation of massless energy-momentum bosons $E - I$, which, given the right energy boundary conditions, decompose into bosons:

XII.18.



8 **It can easily be seen that this decomposition process into photons γ cannot occur in the case of the Dark Energy bosons E_1 and E_2, which by XII.12. are created in the annihilation processes of Dark Matter ${}_4\bar{G}\ {}_4G$, because of the inner-structural separation elements $\equiv$.**

XIII.1. 8.4: The creation of Dark Energy with the coupled construction of 4-dimensional space-time:

As a result of these decomposition and recreation processes, Dark Energy bosons are newly created (see XII.9.).
We could also state this as: From the pairwise Dark Matter annihilation of the massive ${}_4\overline{G}$, ${}_4G$ bosons, pairs of long-range, massive Dark Energy bosons E_1, E_2 are created in pairs. These Dark Energy bosons (see XII.9.) are automatically, necessarily, and inevitably coupled with the construction of a new object with 6 = 4+2 degrees of freedom.

This means:
The construction of Dark Energy from the annihilation processes XII.9. of Dark Matter is automatically associated with the construction of a newly emerging physical construction object, which is newly created by the release of 6 = 4+2 splits per elementary set originally bound to the Dark Matter bosons ${}_4\overline{G}$, ${}_4G$ and which therefore possesses 4+2 = 6 degrees of freedom by XII.9. . This physical construction object with 6 degrees of freedom newly created from the above annihilation processes is:

8

XII.10.

**4-dimensional space-time
with integrated
2-dimensional SU2 isospace components ,**

as is consistent with reality.

Thus, the composition of the Universe "Today" can be divided into the following 3 parts (see XII.42.):

Component ① ≡ 26.8 % ≡ Dark Matter

		Inner-Structural Particle Composition	
neutrino$_1$	ν_1 ≡	$\Psi\Psi\overline{\Psi}$ (ε_9, ξ)	≡ 2-split fermion
neutrino$_2$	ν_2 ≡	$\overline{\Psi}\Psi\Psi$ (η, ε_5)	≡ 2-split fermion
neutrino$_3$	ν_3 ≡	$\Psi\overline{\Psi}\Psi$ (ε_1)	≡ 1-split fermion
anti-gravitational boson	$\overline{G}$ ≡	$\Psi\Psi$ $\Psi\Psi$ $(\varepsilon_6, \varrho; \lambda, \varepsilon_2)$	≡ 4-split boson
repulsive-Boson	R_0 ≡	$\overline{\Psi}$ $\overline{\Psi}$ (0)	≡ 0-split boson
gravitational boson	G ≡	$\{\overline{\Psi}\overline{\Psi}\}$ $\{\overline{\Psi}\overline{\Psi}\}$ $(\varepsilon_8, \varepsilon_7, \varepsilon_3, \varepsilon_4)$	≡ 4-split boson

Component ② ≡ 4.9 % ≡ Normal Matter/Antimatter

		Inner-Structural Particle Composition	
proton (antiproton*)	p^+ (p^-) ≡	$\Psi\Psi\overline{\Psi}$ $(\varepsilon_9, \xi, \varrho, \varepsilon_8)$	≡ 4-split fermion
electron (positron*)	e^+ (e^-) ≡	$\overline{\Psi}\Psi\Psi$ $(\varepsilon_4, \eta, \varepsilon_5)$	≡ 3-split fermion
neutrino	ν ≡	$\Psi\overline{\Psi}\Psi$ (ε_1)	≡ 1-split fermion
strong force	St ≡	$\Psi\Psi$ (λ, ε_2)	≡ 2-split boson
energy-momentum	$E\text{-}I$ ≡	$\overline{\Psi}\Psi\Psi\overline{\Psi}$ $(\varepsilon_6, \varepsilon_3)$	≡ 2-split boson
partial decomposition into	γ Z ≡	$\overline{\Psi}\Psi$ $\Psi\overline{\Psi}$ $(\varepsilon_6, \varepsilon_3)$	
electromag. force	γ ≡	$\overline{\Psi}\Psi$ (0 Split)	≡ 0-split boson
weak force	Z ≡	$\Psi\overline{\Psi}$ $(\varepsilon_6, \varepsilon_3)$	≡ 2-split boson
gravitation	G ≡	$\{\overline{\Psi}\overline{\Psi}\}$ $\{\overline{\Psi}\overline{\Psi}\}$ (ε_7)	≡ 1-split boson

as well as the resulting annihilation end products ((e^+, e^-, p^+, p^-)), see XI.29.

Component ③ ≡ 68.3 % ≡ Dark Energy with the coupled construction of expanding 4-dimensional space-time

- of which 28.5% ≡ energy-momentum bosons $\overline{\Psi}\,\overline{\Psi}\;\Psi\Psi$ (1-split) with the coupled construction of expanding 4-dimensional space-time, created from the annihilation of a 28.5% fraction of Normal Matter/Antimatter (see XII.17.)

- of which 39.8 % ≡ energy-momentum bosons $\{\overline{\Psi}\,\overline{\Psi}\}\;\Psi\Psi$ (1-split) with the coupled construction of expanding 4-dimensional space-time, created from the annihilation of a 39.8% fraction of Dark Matter (see XII.12.)

⑧

SUMMARY:

The development process XIII.1.① - XIII.1.⑧ shows that:

- **All matter and force constructions in the Universe, i.e. all components of the Universe,**

  - Dark Matter,
  - Normal Matter,
  - Dark Energy with the coupled construction of expanding 4-dimensional space-time,

  developed from one and the same preformation structure Ψ(19)U and therefore have the same identical origin.
  This is all described in detail in these pages (see in particular also XIII.1. 7.2.1., 7.2.2)

- **This preformation structure Ψ(19)U ≡ V.7., together with all of its individual and fine structures, is the structure that necessarily and unequivocally results from the elementary foundation I.1., I.2, I.3. (see EAU, Chap. I.-V.).**

  Thus: I.1., I.2, I.3. and consequently V.7. represent the unified inner-structural composition and order system from which the Universe developed, both at small scales (elementary particles) and at large scales (global structures of the Universe), i.e. from which all components of the Universe,

  - Dark Matter,
  - and Normal Matter,
  - as well as Dark Energy with the coupled construction of expanding 4-dimensional space-time,

  are inner-structurally created, composed, and developed.

- **And this in turn means:**

There exists an overarching uniform, inner-structural global composition and order system $\Psi_{\wr U}^{19}$, governing the construction of:

- both Dark Matter
- and Normal Matter
- as well as Dark Energy with coupled 4-dimensional space-time.

XIII.2.

Adopting a slightly more dramatic expression and introducing simpler symbolic notation:

$\Psi_{\wr U}^{19} \equiv \Psi\text{-}19 \equiv$ V.7. **is the inner-structural composition and order system of the Universe**

or:

$\Psi_{\wr U}^{19} \equiv \Psi\text{-}19 \equiv$ V.7. **is the <u>Universe Code</u> Ψ-19.**

Bearing in mind that these pages (see EAU, Chap. I.-V.) presented and explained in detail how the preformation structure $\Psi_{U}^{(19)} \equiv \Psi\text{-}19 \equiv$ V.7. is the structure that necessarily and unequivocally follows from the elementary foundation I.1., I.2., I.3., this in turn means that:

XIII.3.

I.1., I.2., I.3. and consequently V.7. is the <u>Fundamental System of the Universe</u>

or, expressed somewhat more dramatically:

I.1., I.2., I.3. and consequently V.7. is the <u>Fundamental System of Everything</u>,
In order to avoid the loaded connotations of the term "Theory of Everything",

or to express this more simply and attractively:

I.1., I.2., I.3. and consequently V.7. is the <u>Universe Code</u> Ψ-19,
that uniformly governs the construction of the Universe both at small scales (elementary particles) and at large scales (global structures of the Universe), underlying everything that physically exists.

This means:
Since each and every physical event (formation of matter and forces), no matter how different they may seem, develops from one and the same preformation structure Ψ(19)U ≡ V.7. ≡ Universe Code Ψ-19 this identical physical origin uniting the vast diversity of all individual physical process represents an example of what is commonly referred to as a unification process in physics.
These "unification processes" are simply the analytical derivation
- **of the inner-structural particle composition of each force boson (in terms of basis spinors and point splits)**
- **and the inner-structural particle composition of each matter fermion (in terms of basis spinors and point splits) from the preformation structure Ψ(19)U ≡ Universe Code Ψ-19, that underlies everything, and which also determines every physical property of these elementary particles by V.7., VI.3..**

Every aspect of every force boson and every matter fermion in the elementary particle spectrum of the Universe, including:

- **the Primordial Universe before the Big Bang**
- **Dark Matter**
- **Normal Matter**
- **Dark Matter with the coupled construction of expanding 4-dimensional space-time**

could therefore be analytically derived and represented (for a summary, see XI.36. ; XII.42.).

By deriving the inner structure of the composition of every individual elementary particle from the Universe Code Ψ - 19, we also obtain representations of the sub-unification processes for which the field of physics has been searching for the last 60 years with little success.
Every aspect of this inner-structural elementary particle composition is fundamentally and exhaustively explored and fully presented in EAU, Chap. I.-XIII., with references to the previous publications: ADM, MLE, HSB, GDE, UEA, UEP (see EAU).

Thus: From the Universe Code Ψ - 19 ≡ preformation structure Ψ^{19}_{U} ≡ V.7. underlying absolutely everything, namely each and every manifestation of matter and force in the Universe, the following physical unification processes can be derived by considering the process of how the inner-structural composition of each force boson and each matter fermion forms:

XIII.4.

① **The small unification of the electromagnetic and weak interaction**
② **The medium unification of the strong, electromagnetic, and weak interaction**
③ **The great unification of the strong, electromagnetic, weak, and gravitational interaction**
④ **The super-great unification of all interactions (≡ force bosons) in the Universe, i.e.:**

- **of the Primordial Universe before the Big Bang** $_5\overline{G}$, $_3G$, $_2R$
- **of Dark Matter** $_4\overline{G}$, $_4G$, $_0R$
- **of Normal Matter** St, γ , Z, $_1G$
- **of Dark Energy** E_1, E_2 **with the coupled construction of 4-dimensional space-time elementary entities.**

XIII.4.

⑤ The most colossally great global unity (unified origin ≡ Universe Code Ψ - 19) of all force bosons and all matter fermions (and thus of everything that physically exists):

	bosons	fermions
- of the Primordial Universe:	${}_5\overline{G}$, ${}_3G$, ${}_2R$;	${}_1\nu_1$ ≡ massless neutrino, ${}_1\nu_2$ ≡ massless neutrino, ${}_1\nu_3$ ≡ massless neutrino
- of Dark Matter:	${}_4\overline{G}$, ${}_4G$, ${}_0R$;	${}_2\nu_1$ ≡ massive neutrino, ${}_2\nu_2$ ≡ massless neutrino, ${}_1\nu_3$ ≡ massive neutrino
- of Normal Matter:	*St*, γ, *Z*, ${}_1G$;	p^+ ≡ proton, e^- ≡ electron, ν ≡ neutrino
- of Dark Energy:	E_1, E_2 with the coupled construction of 4-dimensional space-time elementary entities.	

This global unity ⑤ is explained by and originates from the fact that every elementary particle listed in ⑤ (both bosons and fermions) is unquestionably and completely formed from one and the same preformation structure Ψ(19)U ≡ V.7. ≡ Universe Code Ψ - 19 as is presented and described in each case in EAU, Chap. I.-XIII. (for a summary, see XI.36., XII.42.)

XIII.5.

Overall summary: **Absolutely everything that physically exists in the Universe originates from one and the same preformation structure Ψ(19)U, and thus originates from the same fundamental code, and thus originates from the same Universe Code Ψ - 19.**

One could say: **Ψ - 19 is the creation code of the Universe.**

Personal summary:

Over the 7 years that it took me to explore this approach, I found recurring evidence that my work is on the right track and is worth pursuing.

For example, among others,

- the **1st major confirmation** for me was in 2010/2011, when I understood how the construction process of matter arises from the fundamental dynamic **I.1., I.2, I.3** and how the point split dynamic develops this construction process into a separation-binding structure, which by means of a chain of processes leads to the **preformation structure** Ψ_{U}^{19} which then forms into each of the individual elementary particles p^+, e^-, ν by means of their respective formation processes, as well as the 4 force bosons of the strong, electromagnetic, weak, and gravitational interaction. Once the right energy boundary conditions are available, the H-atom then forms, representing the fundamental atom of Normal Matter.
  These ideas were first published in "The Construction of Matter" (ADM) on 14/04/2011.

- the **2nd major confirmation** for me was in 2014/2015, when the analytical details of what the first entity ever to emerge in the whole history of the Universe must necessarily have been, i.e. the first ever manifestation of reality to exist, namely the Primordial Universe before the Big Bang. I understood that this Primordial Universe ($_5\overline{G}$, $_3G$, $_2R$, $_1\nu_1$, $_1\nu_2$, $_1\nu_3$) was structured a way that necessarily and inevitably lead to the Big Bang, and I also realized exactly how this process had unfolded some 13.8 billion years ago. I was able to give a fully detailed analytical description of the Big Bang, thus showing that the Universe directly after the Big Bang consisted of 66.6% Dark Matter ($_5\overline{G}$, $_3G$, $_2R$, $_1\nu_1$, $_1\nu_2$, $_1\nu_3$) and 33.3% Normal Matter (p^+, e^-, ν , St, γ $\_$ Z, G). The proportions of this mixture are consistent with the measurements taken by the Planck space telescope on 21/03/2013.
  "The Unified Construction Process of the Universe" (EAU, Chapter XI.) was published on 22/05/2015, and "The Act of Creation of the Universe" (UEA) was published on 17/12/2015, presenting these ideas.

- The **3rd major confirmation** was when the analysis of the Big Bang production cascade revealed the nature of each of the elementary particles of Dark Matter ($_4\overline{G}$, $_4G$, $_0R$; $_2\nu_1$, $_2\nu_2$, $_1\nu_3$) and their respective inner-structural compositions and the properties that they must possess as a result.
  There have not yet been any experimental results about the elementary particles of Dark Matter, but Cern is currently researching them.
  See also EAU, Chapter XI., published on 22/05/2015, and UEA, published on 17/12/2015.

- In the subsequent year 2016, I found the **4th major confirmation** that this approach is correct when I realized that this theory can explain why – as testified by the space telescope measurements – the development of the Universe from the Big Bang until Today involves the continuous annihilation of Dark Matter and Normal Matter and conversely the continuous construction of Dark Energy with the coupled construction of expanding 4-dimensional space-time, which is still happening to this day.
  On 04/08/2016, "The Development Process of the Universe from the Big Bang until Today" (UEP) was published, together with a revised version of Chapter XII. of EAU, on the same date.

- But I consider the **most important evidence** of the correctness of this approach to reside in the conclusion that (as described in this chapter) every event in the Universe is derived from one and the same origin, namely the simplest possible elementary structure **I.1., I.2, I.3** from which:

  - first, as described in detail in Chapters I.-V., **the preformation structure** Ψ_{U}^{19} **≡ Universe Code Ψ-19** necessarily and unequivocally forms. This Ψ_{U}^{19}
  - thus becomes the overarching, unified inner-structural composition and order system of the Universe,
  - and the **Universe Code Ψ-19** sets all events in the Universe in motion by means of the necessary and unequivocal causal links between each of the formation processes described in detail in EAU, Chap. I.-XIII.:

before the Big Bang – during the Big Bang – after the Big Bang until Today.

XIII.6.

Thus: The Universe Code Ψ-19 contains absolutely all fine-structural, global-structural, and composition-related information required for each of the necessary and unequivocal formation processes presented in detail in EAU, Chap. I.-XIII. to set every single event in the Universe in motion.