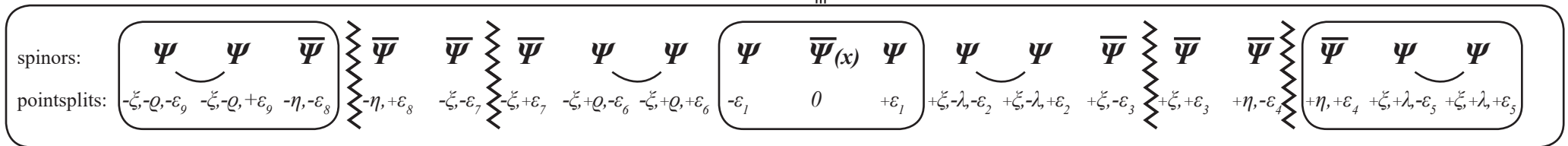


Norbert Winter

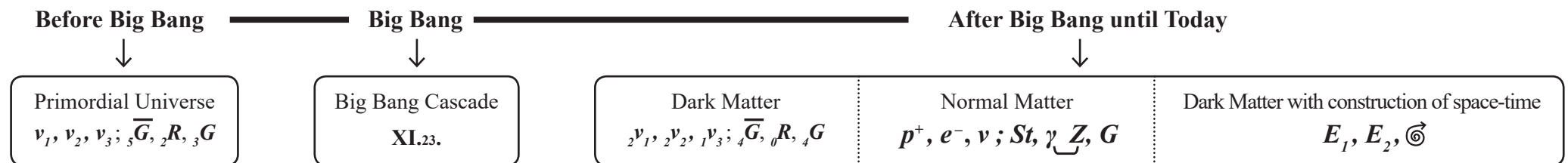
The Universe Code Ψ -19,

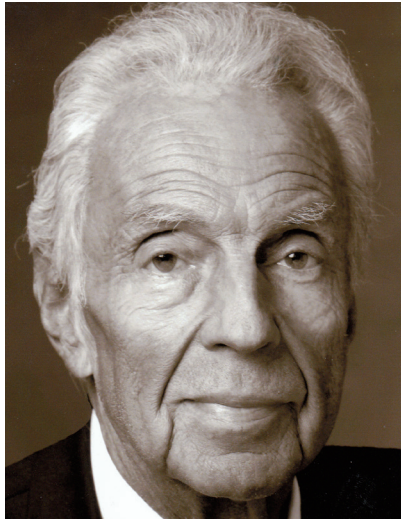
the creation system of the entire process of the universe

$$\left[D_{\sigma_{13}}^{(13)} \Psi(x) \right]_{\approx U} \equiv \Psi_{\approx U}^{(19)}(x, \sigma_{13}) \equiv \Psi_{\approx U}^{(19)}(x) \equiv \Psi\text{-19}$$



Ψ -19 is the creation code of the complete global process of the universe, including all of its individual matter and force manifestations, i.e. all of the elementary particles that exist in the various phases of the universe, which are:





Norbert Winter

- Norbert Winter, born 1942, raised in Göttingen
- Studied Physics at the Universities of Heidelberg and Munich
- Doctorate in Physics with a thesis on elementary particle theory, supervisor H.P. Dürr
- Employed at the Max-Planck Institute for Physics in Munich, student of Werner Heisenberg
- 1974-2006, change of career into the insurance industry, including 25 years as board member or chairman of various insurance companies
- Despite this professional activities constant engagement with questions of logic and physics and constant contact with high-energy physicists
- From 2006, intensive engagement with questions of logic and physics
- From 2008, concrete and targeted development of the following works:

14/04/2011: "The Construction of Matter" (ADM)

06/03/2012: "Matter, Logic, and Existence" (MLE)

19/04/2013: "The Highly Massive Scalar Boson" (HSB)

26/05/2014: "The Law of Greatest Simplicity" (GDE)

22/05/2015: "The Unified Construction Process of the Universe from Smallest to Largest" (EAU, Kap. I-X.)

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 6 Key Processes in the Creation and Development of the Universe" (KPU)

17/03/2017: "The Universe Code Ψ -19" (UC)

17/03/2017: "The Universe Code Ψ -19, the unified composition and order system of the Universe" (UC-AOS)

16/02/2018: "Guide to the source and generating code of the Universe" (WW-UEC)

16/02/2018: "The Universe Code Ψ -19, the creation system of the entire process of the universe" (UC-G)

16/02/2018: "UC-1 – The creation of the Universe Code Ψ -19"

16/02/2018: "UC-2 – The Universe Code Ψ -19,

- The creation system of the first ever manifestation of the universe before the big bang (\equiv primordial universe)
- The creation system of mass and charge"

16/02/2018: "UC-3 – The Universe Code Ψ -19,

the creation system of the big bang (rupture of $\int G$) in the primordial universe

- The restructuring of the elementary particle set that has passed through the Big Bang
- the formation of the normal matter elementary particle set = $\left(p^+, e^-, \nu; S, L, \gamma, Z, G \right) \equiv$ h-atom given suitable energy boundary conditions"

16/02/2018: "UC-4 – The Universe Code Ψ -19,

the creation system:

- of the Big Bang Reproduction Cascade including absolutely all fine and global composition structures of the Earliest Universe directly after the Big Bang ($\frac{2}{3}$ Dark Matter / $\frac{1}{3}$ Normal Matter)
- of the elementary particles of Dark Matter and Normal Matter including their inner-structural particle composition and their physical properties"

16/02/2018: "UC-5 – The Universe Code Ψ -19,

the creation system of dark energy with the coupled construction of 4-dimensional space-time"

Preface:

After publication of the paper

<p>The universe code Ψ-19, the unified composition and order system of the universe</p>
--

≡ UC-AOS (abbr.)

I have received numerous letters with the question:

1. of whether it would be possible - due to the abundance of the overall material and the breadth of the topic of the paper UC-AOS (Chapter I. - XIV., 356 pages) - to recommend a guide with the help of which one can find a clear path through the overall text of the paper
2. what, according to my opinion and with respect to the present overall situation of elementary particle physics and space physics, are the most important topics on either field
3. Some letters contained the question of whether it would be possible to represent the overall universe process as developed in UC-AOS in full details, in a closed, neatly arranged form on approx. 30-50 pages.
4. In other letters, the request was made to split the comprehensive paper UC-AOS into its 5-6 core topics, whereas each of these 5-6 core topics should be 30-50 pages in length, thus easily readable and preferably deal with a topic that is currently being discussed.

The questions 1. and 2. have been answered in the paper:

Guide to the source and generating code of the Universe at small scale (elementary particles) and at large scale (global structures of the Universe) (2/16/2018).

The third question has been dealt with within the paper:

**The universe code Ψ -19,
the generation system of the complete universe process (2/16/2018).**

Question 4 is dealt with within the following 5 papers **UC-1** → **UC-5**:

UC-1 (02/16/2018)
UC-2 (02/16/2018)
UC-3 (02/16/2018)
UC-4 (02/16/2018)
UC-5 (02/16/2018)

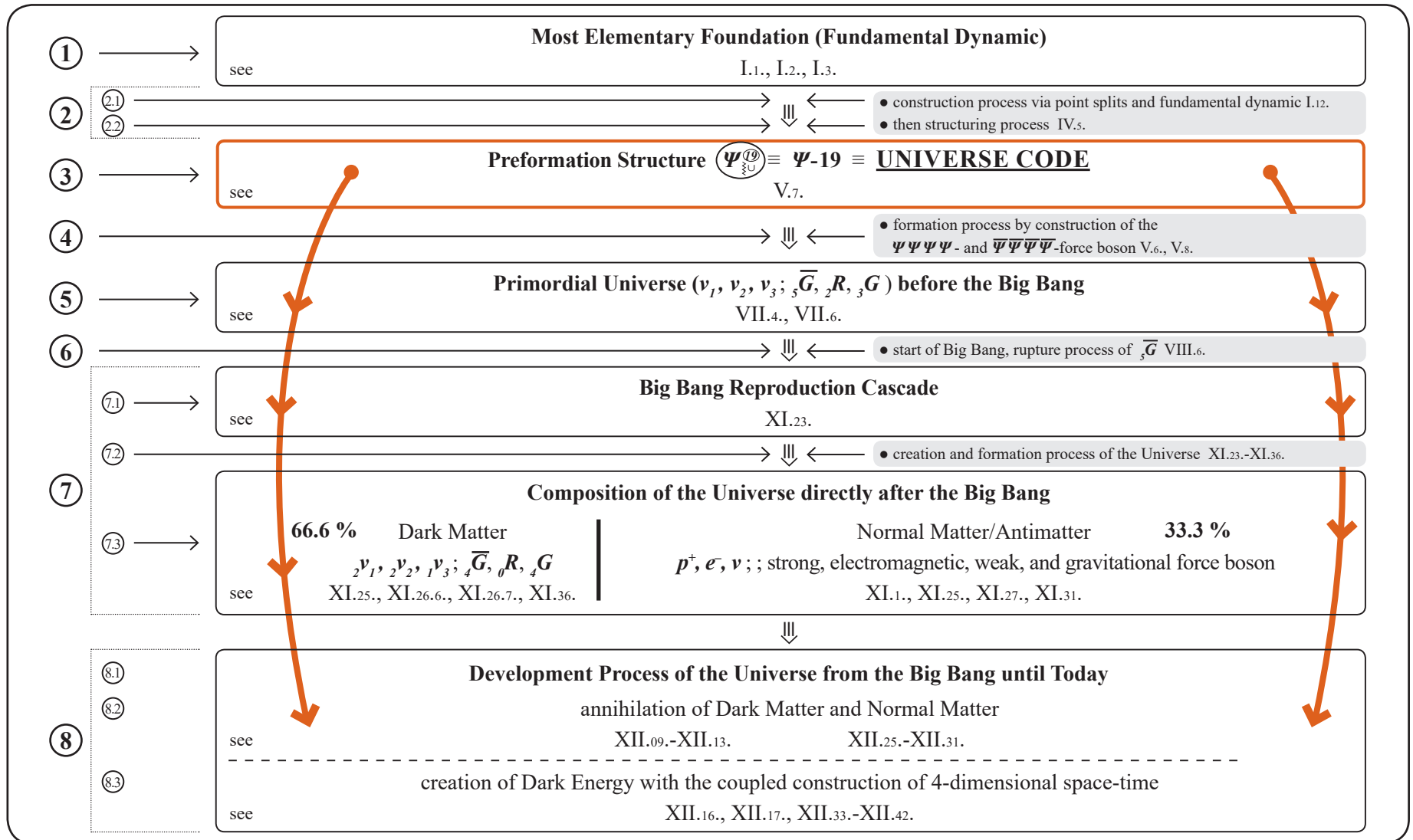


The present work „**The Universe Code Ψ -19, the creation system of the entire process of the universe**“ refers to the work UC-AOS. Therefore, the numerical references used in the following text refer to the numerical representation of the paper UC-AOS.

Thus, the reader can directly navigate to the text within the entire paper UC-AOS and retrieve the required information from the relevant text passages, in case further information on a certain subject is needed.

The Universe Code Ψ -19, the creation system of the entire process of the universe:

In UC-AOS, Chapter I.-XIV.. the construction and development process of the Universe has been developed 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.

UC-AOS 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

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

XIII.1. ① : The formation of the most elementary foundation (fundamental dynamic) (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 $\bar{\Psi}$. 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. $D \Psi(x) = \Psi(x-\sigma_\alpha) \bar{\Psi}(x) \Psi(x+\sigma_\alpha) ; \sigma_\alpha \equiv \text{point split with } \sigma_\alpha \rightarrow 0$

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

\equiv

most elementary
structure

where $x \equiv \bullet \equiv$ interaction point satisfying: point split dynamic $\sigma \neq 0, \sigma \rightarrow 0$



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 $\bar{\Psi}(x)$ must be 4-component spinors, for the following reason: From **I.1.** it follows that: $D \Psi = \Psi_2 \bar{\Psi}_3 \Psi_4$ and from **I.2.** it follows that: $D \bar{\Psi} = \bar{\Psi}_5 \Psi_6 \bar{\Psi}_8$, and so if both **I.1.** and **I.2.** hold, there is the following spinor structure.

I.2.2.

Ψ is a $\Psi = \Psi, \Psi, \Psi, \Psi$ -spinor, i.e. a 4-component spinor

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

I.3.

From the fundamental interaction: $D \Psi = \Psi \bar{\Psi} \Psi$ and $D \bar{\Psi} = \bar{\Psi} \Psi \bar{\Psi}$, 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:

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

1

Because both $\Psi_{(x)}$ and $\bar{\Psi}_{(x)}$ have length dimension $-\frac{1}{2}$:

The basis spinors $\Psi_{(x)}$ and $\bar{\Psi}_{(x)}$ are not observable entities. Observable entities satisfy the following:

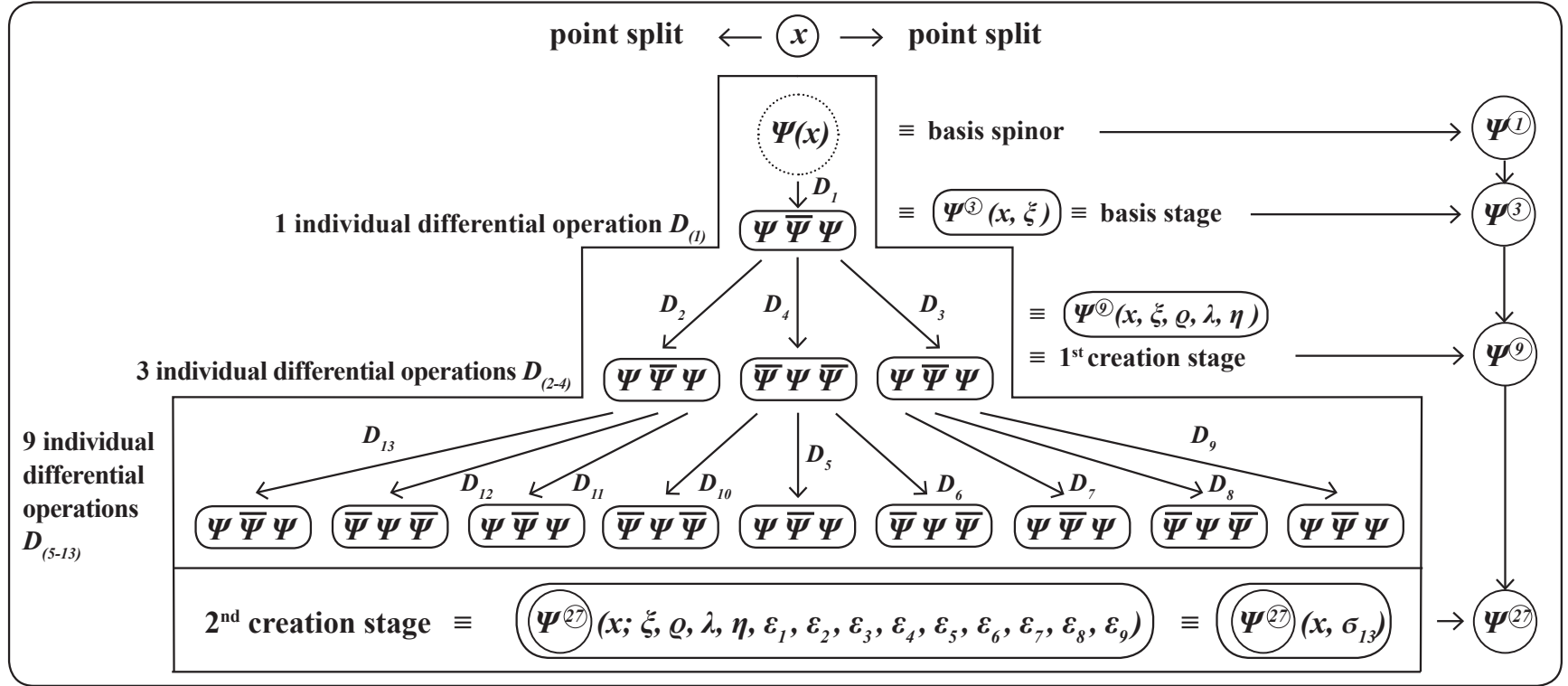
I.4.

- 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 $\bar{\Psi}$ 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.):



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:

$\Psi^{(27)}$

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
$-\xi - \rho$	$-\xi - \rho$	$-\xi - \rho$	$-\eta$	$-\eta$	$-\eta$	$-\xi$	$-\xi$	$-\xi$	$-\xi + \rho$	$-\xi + \rho$	$-\xi + \rho$	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	$+\varepsilon_5$

III.4.1.

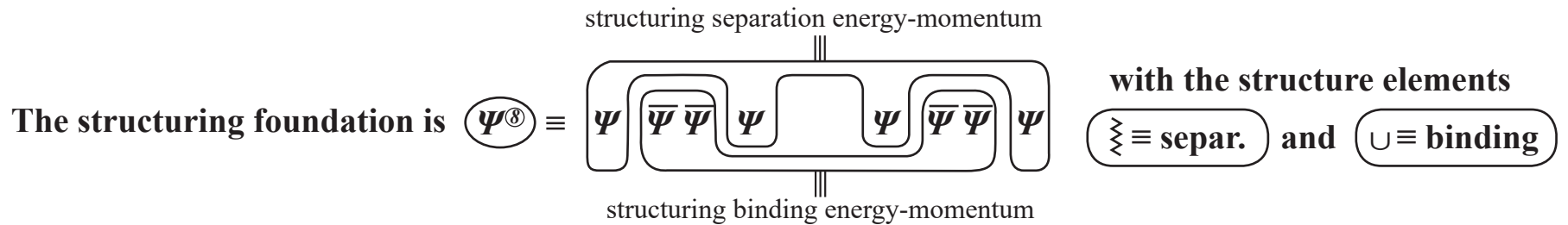
XIII.1. ②, ②.2: The formation of the structuring and preformation processes (see I.8., IV.1. - IV.8.):

Process	\Rightarrow	separ. mom.	+	separ. energy	+	binding moment.	+	binding energy	$=$	total
Length dimension	\Rightarrow	(-1)	+	(-1)	+	(-1)	+	(-1)		(-4)

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

\Rightarrow 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 $\bar{\Psi}$ have dimension $-\frac{1}{2}$, $\dim \Psi = -\frac{1}{2}$, this must namely be

a spinor subset $\Psi^{\otimes 8}$ with $[\dim \Psi^{\otimes 8}] = [\dim (-4)]$



②.2 \Rightarrow How exactly the structuring foundation Ψ^8 forms is described below:

By means of the point split:

First point split $\sigma \neq 0$: $\leftarrow x \rightarrow$ (repulsion)

Then point split $\sigma \rightarrow 0$: $\rightarrow x \leftarrow$ (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.

2

In this primary separation process, the 4 spinors of the $\Psi^{27}(x, \sigma_{I3})$ -system directly associated with the primary splits $-\xi, -\eta, +\xi, +\eta$ (see III.4. and in particular III.4.1.), namely:

IV.2.

$\overbrace{\Psi(x-\xi) \dots \Psi(x-\eta) \dots \Psi(x+\xi) \dots \Psi(x+\eta)}$ form into the separation energy-momentum necessary by I.8.1. to endow the spinor set $\Psi^{27}(x, \sigma_{I3})$ with the structure of 4 separating elements $\dots \tilde{\sim} \dots \tilde{\sim} \dots \tilde{\sim} \dots \tilde{\sim} \dots$.

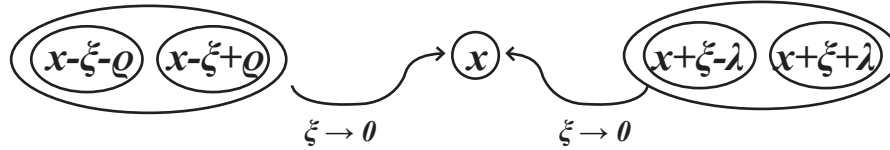
(2.2) \Rightarrow The binding structure works analogously:

The spinors of $\Psi^{(27)} \equiv \text{III.4}$ at the local points $(x-\xi-q), (x-\xi+q), (x+\xi-\lambda), (x+\xi+\lambda)$, – thus also without an ξ -split – have a binding effect, since the $(\text{splits } q, \lambda)$ 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 $\sigma \rightarrow 0$ (here $\xi \rightarrow 0$) acts as a binding structure as $\xi \rightarrow 0$

IV.3.



IV.4.

Thus: There exists the binding energy-momentum $\equiv \overline{\Psi}(x-\xi-q) \dots \overline{\Psi}(x-\xi+q) \dots \overline{\Psi}(x+\xi-\lambda) \dots \overline{\Psi}(x+\xi+\lambda)$ which endows the spinor set $\Psi^{(27)}(x, q_{13})$ 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 $\sigma \rightarrow 0$ ”.

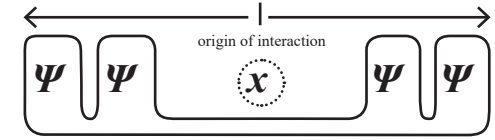
This creates the structuring required by the process: separation and binding (see III.6.2).

2.2 \Rightarrow

Namely as

structuring separation **energy-momentum**

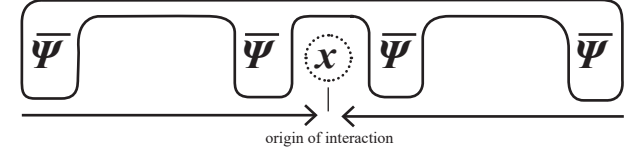
$$\equiv (E - I)_{\text{separation}} \equiv$$



and

structuring binding **energy-momentum**

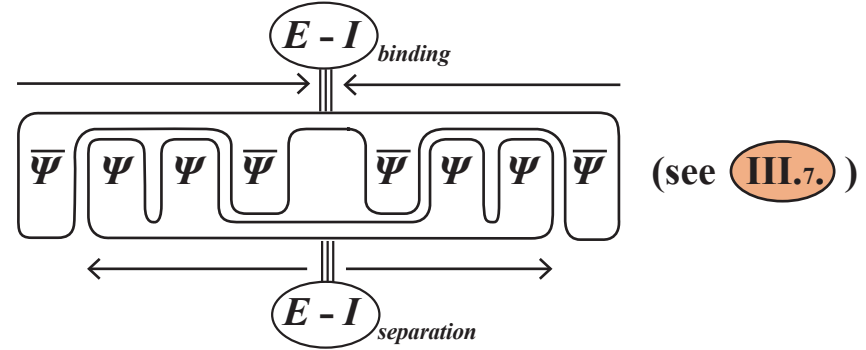
$$\equiv (E - I)_{\text{binding}} \equiv$$



IV.5.

The structuring foundation is

$$\Psi^{(8)} \equiv$$



2

Thus: In the 3rd fundamental process, the **separation and binding energy-momentum** $\equiv \Psi^{(8)}$ 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 “ $\tilde{\Sigma}$ ” and “ \cup ” in the resulting $\Psi^{(19)}$ -spinor set.

IV.6.

$$\Psi^{(27)} \xrightarrow{(E - I)_{\text{separation}} \uparrow (E - I)_{\text{binding}}} \Psi^{(19)}_{\tilde{\Sigma} \cup}$$

Thus, the $\Psi^{(19)}$ -spinor set, structured with the structural elements $\tilde{\Sigma} \equiv \text{separation}$ and $\cup \equiv \text{binding}$ in order to allow particle formation, is unequivocally generated as follows:

(2.2) \Rightarrow

IV.7.

The individual spinors that make up the $(E - I)_{\text{separation}}$ act with a structuring effect and are consumed by this structuring action, forming the separation energy-momentum, namely $(E - I)_{\text{separation}}$ which acts from within $\Psi^{(27)}$. Wherever these $(E - I)_{\text{separation}}$ spinors act, the separation structure element \approx is created.

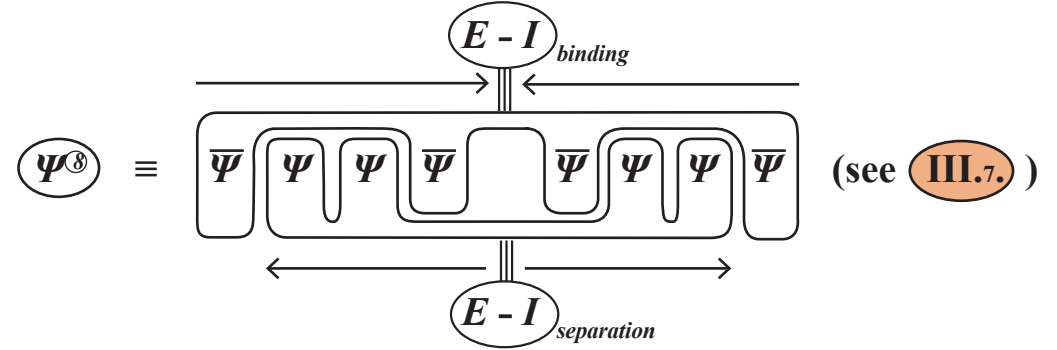
The binding energy-momentum $\equiv (E - I)_{\text{binding}}$, works analogously, namely:

The individual spinors that make up the $(E - I)_{\text{binding}}$ act with a structuring effect and are consumed by this structuring action, forming the internally-acting binding energy-momentum $(E - I)_{\text{binding}}$. This binding action is what consumes them. Wherever these $(E - I)_{\text{binding}}$ -spinors act, the binding structure element \cup is created.

IV.8.

XIII.1. ③: The formation of the preformation structure $\Psi_{\Sigma U}^{(19)} \equiv \Psi-19$ (see III.4.1., III.7., V.7.):

By incorporating the structuring foundat



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

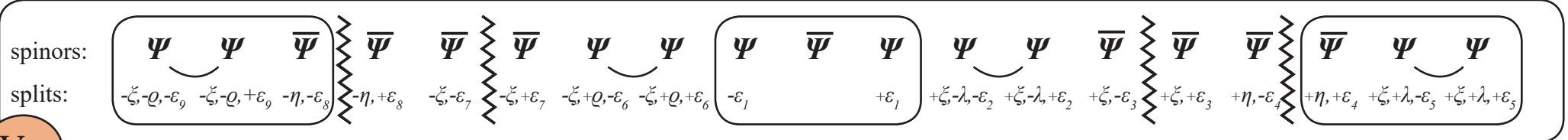
$\Psi^{(27)} \equiv \text{III.4.1.}$

Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	Ψ	$\bar{\Psi}$	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	$+\varepsilon_5$

$\Psi^{(27)} \xrightarrow{E-I \text{ separation} \uparrow E-I \text{ binding}} \Psi_{\Sigma U}^{(19)}$ forms into the preformation structure $\Psi_{\Sigma U}^{(19)}$

with the dynamically created point split sets:

$\Psi_{\Sigma U}^{(19)}$



V.7.

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

Because of the pre-established action and function of the structure foundation $(\Psi^{(8)})$ (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 \equiv repulsive

$(\bar{\Psi} \bar{\Psi} \bar{\Psi} \bar{\Psi})$ -configurations have a binding effect \equiv attractive

Furthermore: Each separation structure element \approx in the preformation structure $(\Psi^{(19)})$ (V.1.) is directly surrounded by 2 $\bar{\Psi}$ -spinors, i.e. $(\bar{\Psi} \approx \bar{\Psi})$.

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

the spinor configuration $(\bar{\Psi} \bar{\Psi})$ 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 \cup in the preformation structure $(\Psi^{(19)})$ (V.1.) is directly surrounded by 2 Ψ -spinors, i.e. $(\Psi \cup \Psi)$.

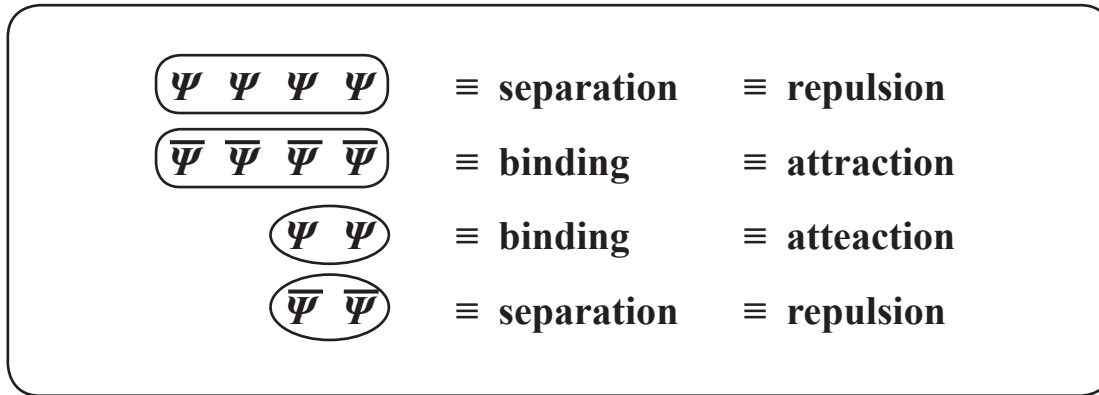
Thus, in all subsequent events (all events in the Universe until today),

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 \Rightarrow

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.

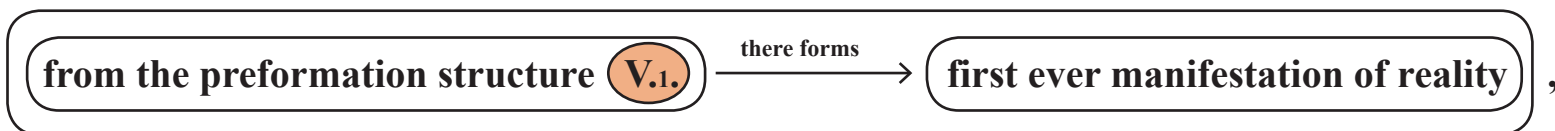


\equiv fundamental force structure

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.

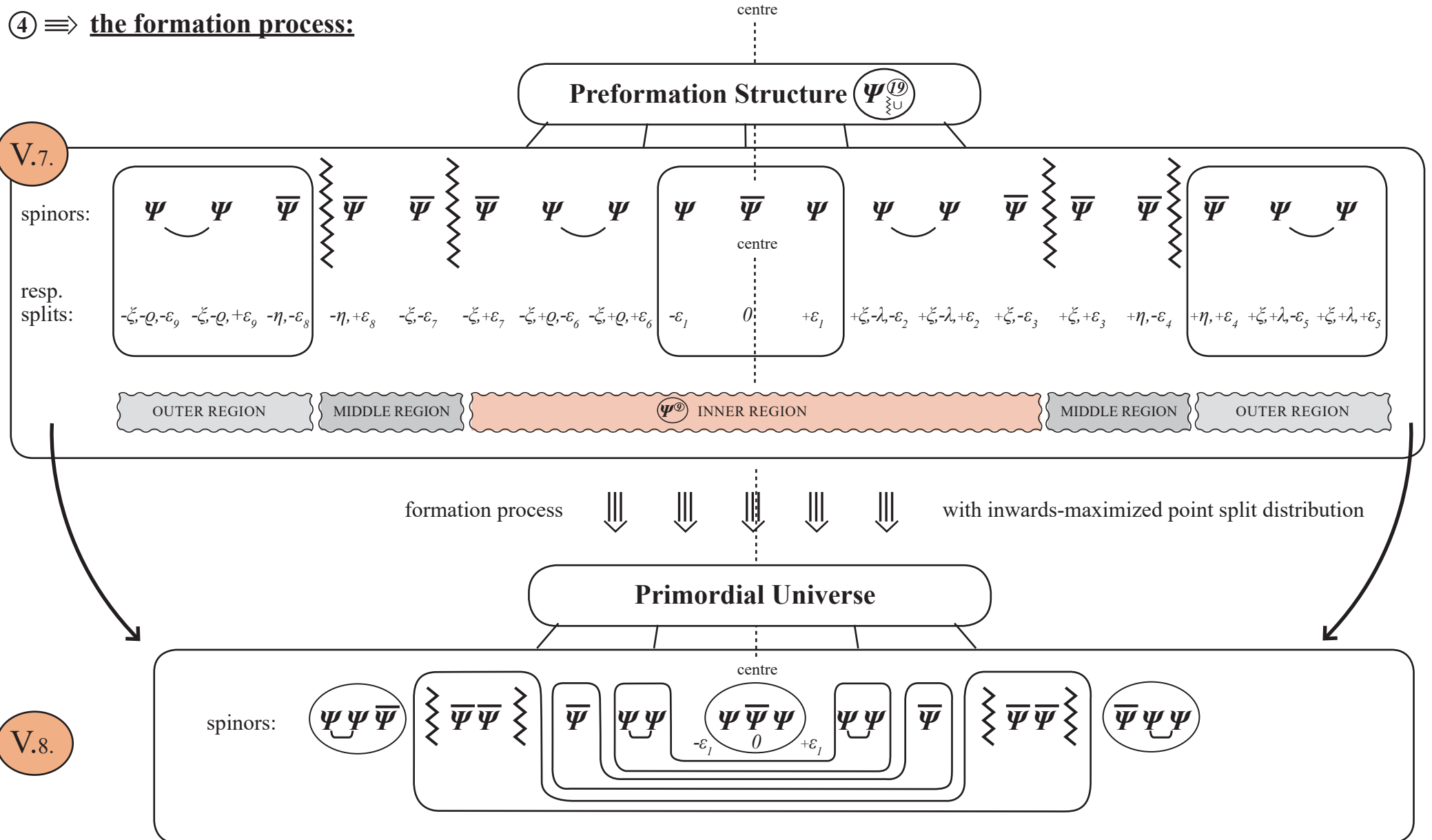
The structure of the Primordial Universe may therefore be described as follows:

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



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

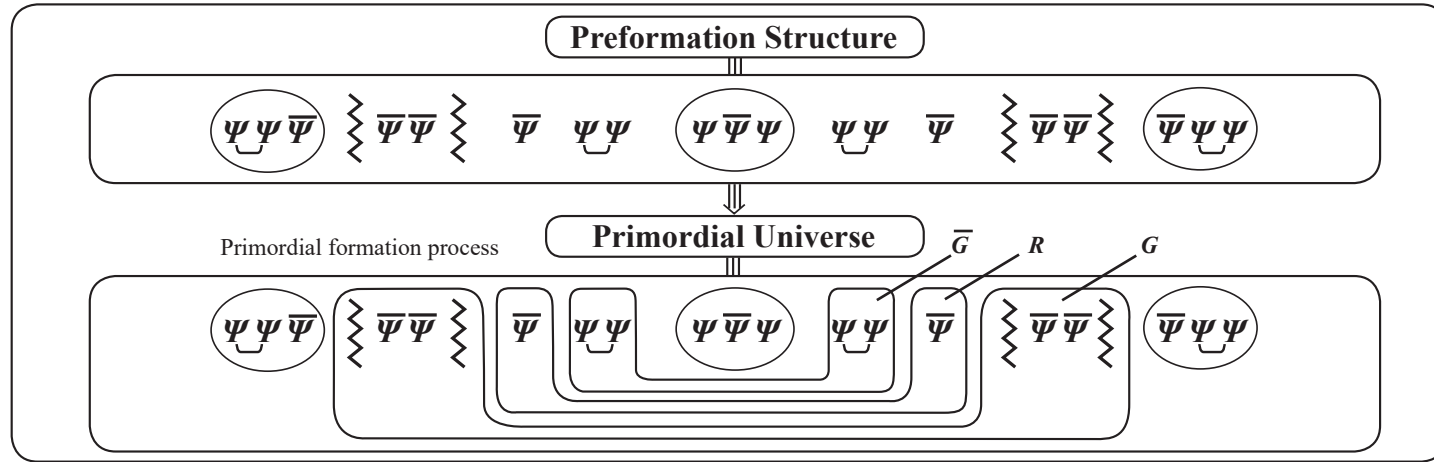
④ \Rightarrow the formation process:



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

Since both Ψ and $\bar{\Psi}$ (see I.2.2.) are 4-component spinors in the primordial formation process, the $\Psi^{(4)}$ and $\bar{\Psi}^{(4)}$ -formations are created from the preformation structure V.7. in accordance with the minimality principle I.0.3. .

The rest forms as a result of the requirements associated with the global fermionic structure $\Psi^{(19)}$:



with the 4-spinor formations

$$\bar{G} \equiv \Psi^{(4)} \equiv \boxed{\Psi\Psi} \sqcup \boxed{\Psi\Psi} \equiv \boxed{\Psi\Psi\Psi\Psi} \stackrel{\text{by IV.5.}}{=} \boxed{\text{repulsive} \equiv \text{separating}}$$

$$G \equiv \bar{\Psi}^{(4)} \equiv \boxed{\bar{\Psi}\bar{\Psi}} \sqcup \boxed{\bar{\Psi}\bar{\Psi}} \equiv \boxed{\bar{\Psi}\bar{\Psi}\bar{\Psi}\bar{\Psi}} \stackrel{\text{by IV.5.}}{=} \boxed{\text{attractive} \equiv \text{binding}}$$

and

$$R \equiv \bar{\Psi}^{(2)} \equiv \boxed{\bar{\Psi}} \sqcup \boxed{\bar{\Psi}} \equiv \boxed{\bar{\Psi}\bar{\Psi}} \stackrel{\text{by V.5.}}{=} \boxed{\text{repulsive}}$$

This primordial formation process determines all subsequent events associated with the fundamental force structure:

$\boxed{\bar{\Psi}\bar{\Psi}\bar{\Psi}\bar{\Psi}} \equiv \text{repulsion}$; $\boxed{\Psi\Psi\Psi\Psi} \equiv \text{attraction}$, and since the separation elements \sqcup always occur as $\boxed{\bar{\Psi}\sqcup\bar{\Psi}}$:

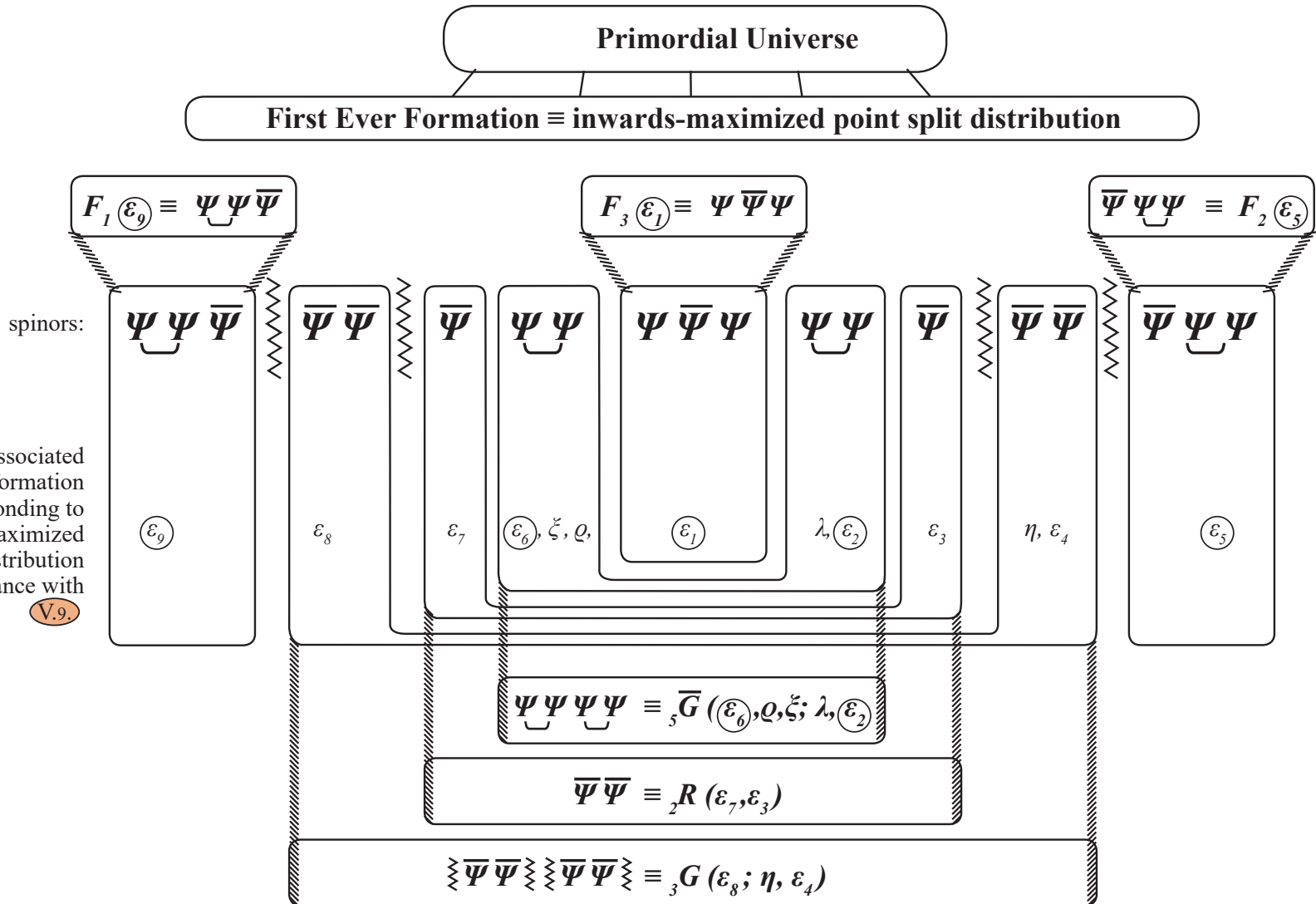
$\boxed{\bar{\Psi}\bar{\Psi}}$ -formations are repulsive; and since the binding elements \sqcup always occur as $\boxed{\Psi\Psi}$: $\boxed{\Psi\Psi}$ -formations are attractive (see V.6.).

⑤ \Rightarrow

V.10.

⑤

point splits associated
with each formation
entity corresponding to
an inwards-maximized
point split distribution
in accordance with
V.9.



⑤ \Rightarrow 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:

The 3 most elementary fermions:

$$\begin{aligned}
 F_1 (\varepsilon_9) &\equiv \boxed{\Psi \Psi \bar{\Psi}} (\varepsilon_9) \equiv \text{1-split object} \stackrel{\text{by VI.3.1.}}{\equiv} \text{massless} \equiv \text{named: } \boxed{\text{neutrino}_1} \equiv \nu_1 \\
 F_2 (\varepsilon_5) &\equiv \boxed{\bar{\Psi} \Psi \Psi} (\varepsilon_5) \equiv \text{1-split object} \equiv \text{massless} \equiv \text{named: } \boxed{\text{neutrino}_2} \equiv \nu_2 \\
 F_3 (\varepsilon_1) &\equiv \boxed{\Psi \bar{\Psi} \Psi} (\varepsilon_1) \equiv \text{1-split object} \equiv \text{massless} \equiv \text{named: } \boxed{\text{neutrino}_3} \equiv \nu_3
 \end{aligned}$$

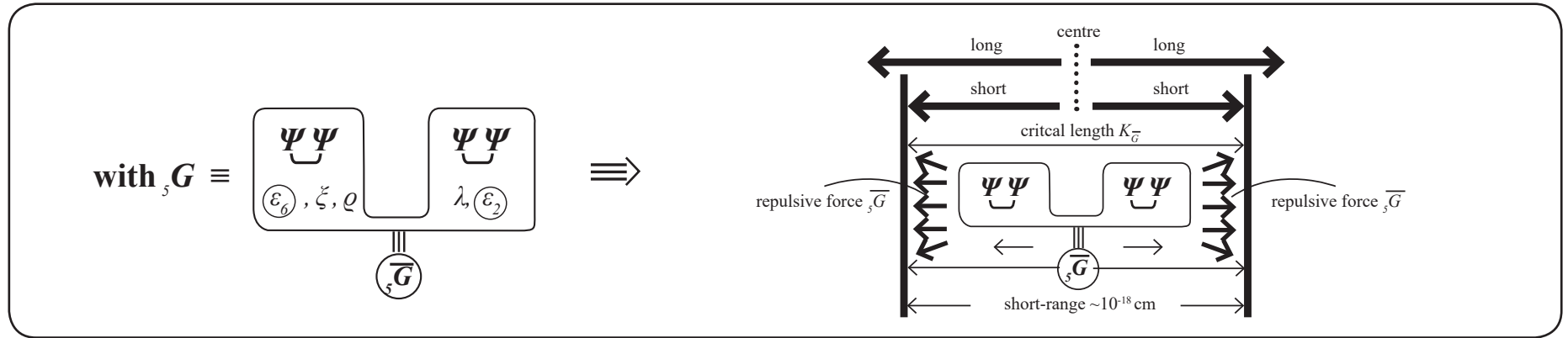
VII.1.

The 3 most elementary bosons:

$$\begin{aligned}
 {}_5\bar{G} (\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2) &\equiv \boxed{\Psi \Psi \quad \Psi \Psi} (\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2) \equiv \text{5-split object} \stackrel{\text{by V.6, VI.3.}}{\equiv} \text{massive, strongly repulsive} \\
 &\equiv \text{named: } \boxed{\text{anti-gravitational force}} \\
 {}_2R (\varepsilon_7, \varepsilon_3) &\equiv \boxed{\bar{\Psi} \quad \bar{\Psi}} (\varepsilon_7, \varepsilon_3) \equiv \text{2-split object} \equiv \text{massive, repulsive} \\
 &\equiv \text{named: } \boxed{\text{repulsion force}} \\
 {}_3G (\varepsilon_8; \eta, \varepsilon_4) &\equiv \boxed{\bar{\Psi} \bar{\Psi} \quad \bar{\Psi} \bar{\Psi}} (\varepsilon_8; \eta, \varepsilon_4) \equiv \text{3-split object} \equiv \text{massive, weakly attractive} \\
 &\equiv \text{named: } \boxed{\text{gravitational force}}, \text{ not yet the} \\
 &\quad \text{long-range } \text{1-split} \text{ gravitational force } G_1
 \end{aligned}$$

XIII.1. ⑥: The origin and beginning of the Big Bang (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.):



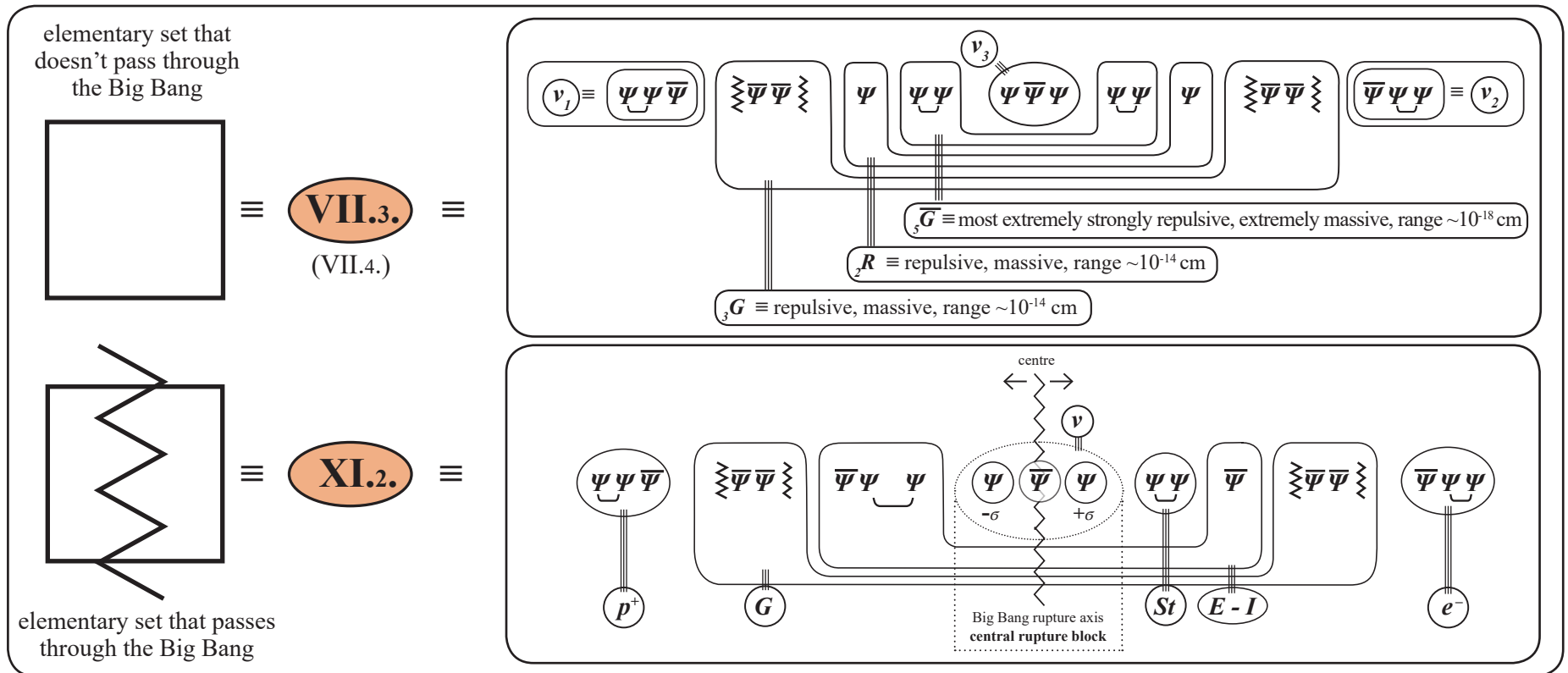
Due to the most extremely strong **intrinsic repulsion away from the centre** associated with it (see V.6., VII.7.), the extremely massive – and therefore extremely short-range – gradual repulsive expansion of the repulsive anti-gravitational force ${}_5\overline{G}$ necessarily reaches the **critical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

The mass structure of ${}_5\overline{G} \equiv \overline{\Psi\Psi} \overline{\Psi\Psi} \equiv {}_5\overline{G}(\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2)$ is concretely and inevitably associated with and “imprinted” onto the spinor configuration $\overline{G} \equiv \overline{\Psi\Psi} \overline{\Psi\Psi}$ by the 2 circled ε_6 - and ε_2 -splits.

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

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:



7.1 \Rightarrow XI.23.

Big Bang Production Cascade

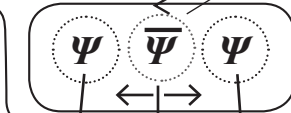
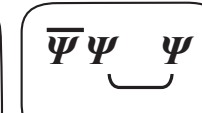
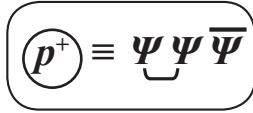
n-th production level, elementary sets produced: $s(n) \equiv 3^{n-1}$

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

1st production level $\equiv n = 1$

$s(1) \equiv \textcircled{1}$ elementary particle set (ES) Ξ

\equiv XI.2.



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

2nd production level $\equiv n = 2$

$s(2) \equiv 3^{(2-1)} \equiv \textcircled{3}$ ES Ξ



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

3rd production level $\equiv n = 3$

$s(3) \equiv 3^{(3-1)} \equiv \textcircled{9}$ ES Ξ



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

4th production level $\equiv n = 4$

$s(4) \equiv 3^{(4-1)} \equiv \textcircled{27}$ ES Ξ



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

\vdots

$(n_f - 1)$ -th production level \equiv last-but-one production level \equiv last iteration of the Big Bang, which produces ES Ξ :

$s(n_f - 1) \equiv \textcircled{3^{(n_f - 2)}}$ ES Ξ 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.

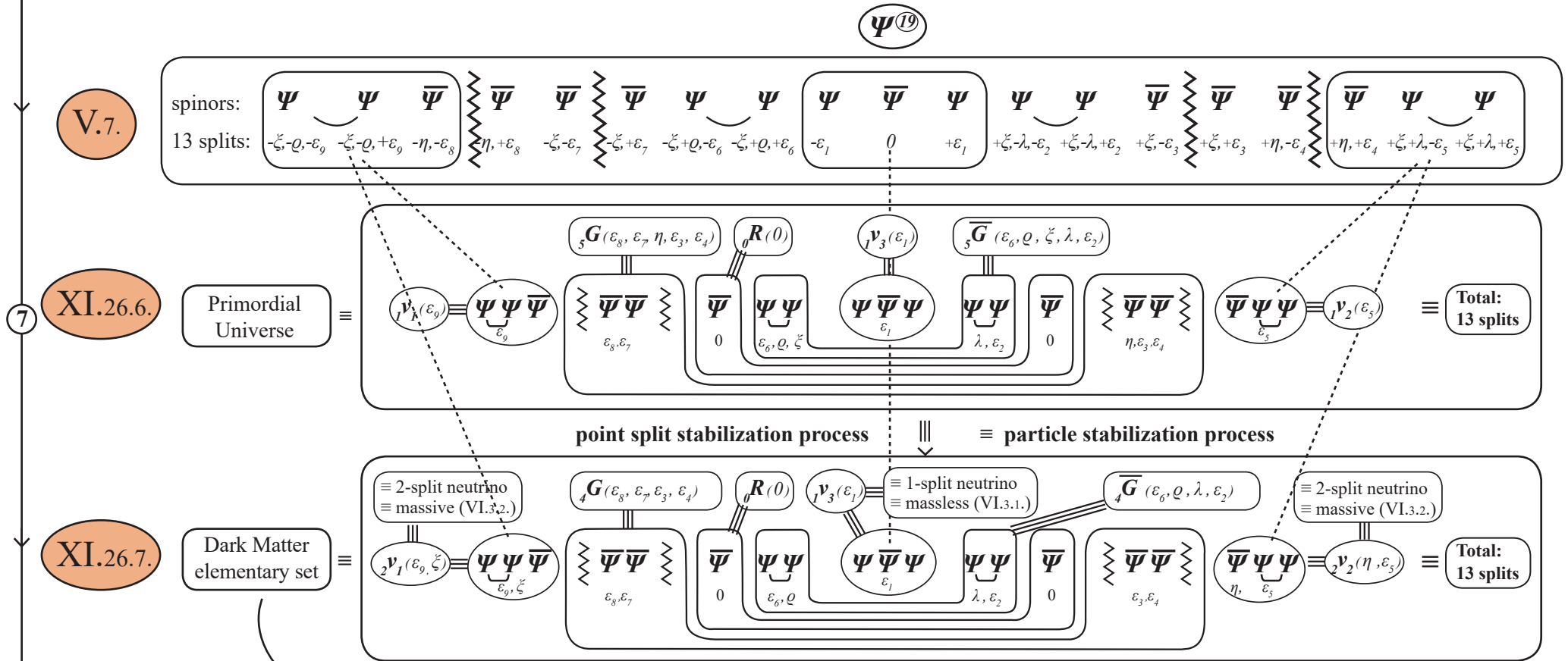
$s(n_f) \equiv \textcircled{3^{(n_f - 1)}}$ ES $\square \equiv$ production at the final level

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) \equiv Dark Matter \equiv 66.6 % of the Earliest Universe \equiv $(3^{(n_r-1)})$ - \square -elementary sets

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



with: ν_1 \equiv massive neutrino, ν_2 \equiv massive neutrino, ν_3 \equiv massless neutrino;
 \bar{G} \equiv highly massive, extremely short-range, extremely strongly repulsive boson;
 G \equiv massive, short-range, extremely weakly attractive boson;
 R_0 \equiv massless, long-range, medium-strong repulsive boson

XIII.1. 7.2.2: Component (2) \equiv Normal Matter \equiv 33.3 % of the Earliest Universe $\equiv \left(\frac{3^n-1}{2}\right)$ - \boxtimes -elementary sets (see XI.2.)

$$\begin{array}{c}
 \Psi^{(19)} \\
 \hline
 \text{spinors: } \begin{array}{c} \Psi \quad \Psi \quad \bar{\Psi} \\ \text{13 splits: } \begin{array}{c} \begin{array}{c} \text{---}\zeta_-, -\varrho_-, \varepsilon_9 \quad \text{---}\zeta_-, -\varrho_+, \varepsilon_9 \quad -\eta_-, \varepsilon_8 \\ \text{---}\eta_+, \varepsilon_8 \end{array} \\ \begin{array}{c} \text{---}\zeta_-, \varepsilon_7 \quad \text{---}\zeta_+, \varepsilon_7 \quad \text{---}\zeta_+, \varrho_-, \varepsilon_6 \quad \text{---}\zeta_-, \varrho_+, \varepsilon_6 \\ -\varepsilon_1 \quad 0 \quad +\varepsilon_1 \end{array} \\ \begin{array}{c} \text{---}\zeta_-, \lambda_-, \varepsilon_2 \quad \text{---}\zeta_-, \lambda_+, \varepsilon_2 \quad \text{---}\zeta_-, \varepsilon_3 \quad \text{---}\zeta_+, \varepsilon_3 \\ +\eta_-, \varepsilon_4 \end{array} \\ \begin{array}{c} \text{---}\eta_+, \varepsilon_4 \quad \text{---}\zeta_+, \lambda_-, \varepsilon_5 \quad \text{---}\zeta_+, \lambda_+, \varepsilon_5 \end{array} \end{array} \end{array}
 \end{array}$$

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

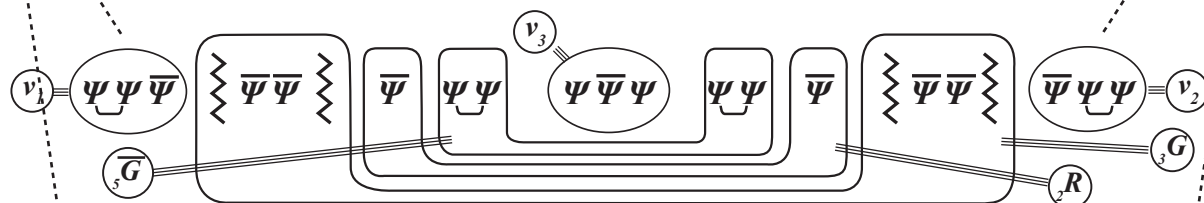
3. The formation of the unstable first ever Primordial Universe before the Big Bang:

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

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

$$\overline{\langle \overline{\Psi} \overline{\Psi} \rangle \langle \overline{\Psi} \overline{\Psi} \rangle} \equiv {}_3G(\varepsilon_s, \eta, \varepsilon_s)$$

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

Diagram illustrating a Big Bang Big Bang (BB-BB) configuration. The diagram shows two regions separated by a vertical wavy line labeled "centre". Both regions are labeled "Big Bang" with arrows pointing away from the center. The left region contains a box labeled $\Psi\Psi$ and parameters $(\varepsilon_6, \zeta, \rho)$. The right region contains a box labeled $\Psi\Psi$ and parameters $\lambda, (\varepsilon_2)$. A horizontal line at the bottom connects the two boxes.

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

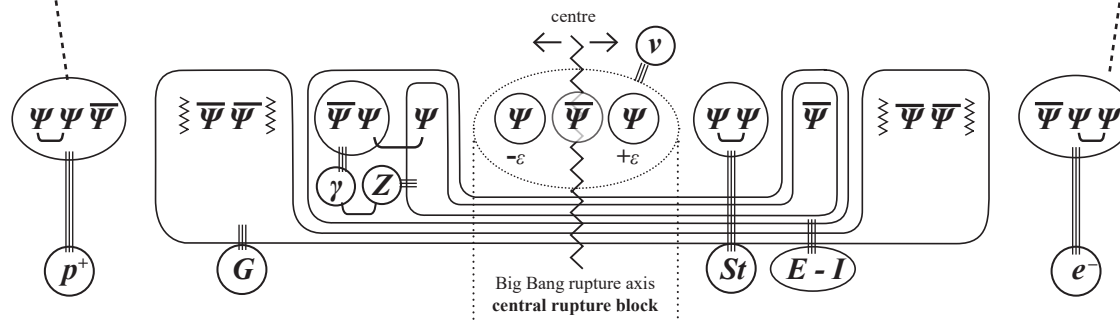
with:

 ${}_2\nu_1 \equiv \text{massive neutrino}, {}_2\nu_2 \equiv \text{massive neutrino}, {}_1\nu_3 \equiv \text{massless neutrino};$

$G \equiv$ highly massive, extremely short-range, extremely strongly repulsive boson;

$G \equiv$ massive, short-range, extremely weakly attractive boson;

${}_{\theta}R_{\theta} \equiv$ 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 Components $(\frac{2}{3}, \frac{1}{3})$ of the total Universe directly after the Big Bang, and the corresponding $(6, 6) \equiv 12$ elementary particles

Dark Matter

Component ① $\equiv 66.6\%$	Inner-Structural Particle Composition	by V., VI.	Mass/Charge	Force Structure	Range	Found?
neutrino ₁ (ν_1)	$\Psi\Psi\bar{\Psi}(\varepsilon_9, \varepsilon_8)$ \equiv 2-split fermion	\Rightarrow	massive (mass $\neq 0$)			yes
neutrino ₂ (ν_2)	$\bar{\Psi}\Psi\Psi(\varepsilon_4, \varepsilon_5)$ \equiv 2-split fermion	\Rightarrow	massive (mass $\neq 0$)			yes
neutrino ₃ (ν_3)	$\Psi\bar{\Psi}\Psi(\varepsilon_1)$ \equiv 1-split fermion	\Rightarrow	massless			yes
anti-gravitational boson (\bar{G})	$\Psi\Psi \quad \Psi\Psi(\varepsilon_6, \varrho; \lambda, \varepsilon_2)$ \equiv 4-split boson	\Rightarrow	extremely high mass, charged with anti-gravitational elementary charge \bar{q}_θ	most extremely strongly repulsive	10^{-17} cm	not yet
repulsive boson (R_θ)	$\bar{\Psi} \quad \bar{\Psi}(0)$ \equiv 0-split boson	\Rightarrow	massless	repulsive	long	not yet
gravitational boson (G)	$\bar{\Psi}\bar{\Psi}\bar{\Psi}\bar{\Psi}(\zeta, \varepsilon_7, \varepsilon_3, \eta)$ \equiv 4-split boson	\Rightarrow	massive, charged with gravitational charge q_θ with $(\bar{q}_\theta + q_\theta) = 0$	most extremely weakly attractive	10^{-15} cm	not yet
as well as the end products created from the annihilation of (G, \bar{G}) , including the split release products thus created, and the Dark Energy created from these and other annihilation processes with coupled 4-dimensional space-time structure						not yet

Normal Matter/Antimatter

Component ② $\equiv 33.3\%$	Inner-Structural Particle Composition	by V., VI.	Mass/Charge	Force Structure	Range	Found?
proton (antiproton*) $(p^+)(p^-)$	$\Psi\Psi\bar{\Psi}(\varepsilon_9, \zeta, \varrho, \varepsilon_8)$ \equiv 4-split fermion	\Rightarrow	higher mass, charge $\oplus(\ominus)$			yes
electron (positron*) $(e^+)(e^-)$	$\bar{\Psi}\Psi\Psi(\varepsilon_4, \eta, \varepsilon_5)$ \equiv 3-split fermion	\Rightarrow	low mass, charge $\ominus(\oplus)$			yes
neutrino (ν)	$\Psi\bar{\Psi}\Psi(\varepsilon_1)$ \equiv 1-split fermion	\Rightarrow	massless			yes
strong force (S)	$\Psi\Psi(\lambda, \varepsilon_2)$ \equiv 2-split boson	\Rightarrow	massive, uncharged	strongly attractive	10^{-13} cm	yes
energy-momentum $(E-I)$	$\bar{\Psi}\Psi\bar{\Psi}\bar{\Psi}(\varepsilon_6, \varepsilon_3)$ \equiv 2-split boson	\Rightarrow				yes
partial decomposition into $(\gamma)(Z)$	$\bar{\Psi}\Psi\bar{\Psi}\bar{\Psi}(\varepsilon_6, \varepsilon_3)$					yes
electromag. force (γ)	$\bar{\Psi}\Psi(0 \text{ split})$ \equiv 0-split boson	\Rightarrow	massless	medium strong	long	yes
weak force (Z)	$\Psi\bar{\Psi}(\varepsilon_6, \varepsilon_3)$ \equiv 2-split boson	\Rightarrow	massive, uncharged	weak	10^{-15} cm	yes
gravitation (G)	$\bar{\Psi}\bar{\Psi}\bar{\Psi}\bar{\Psi}(\varepsilon_7)$ \equiv 1-split boson	\Rightarrow	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

${}_4\overline{G} \equiv$ extremely high mass, most extremely strongly repulsive, extremely short-range (10^{-17} cm), anti-gravitational boson with charge \overline{q}_0
 ${}_4G \equiv$ 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.

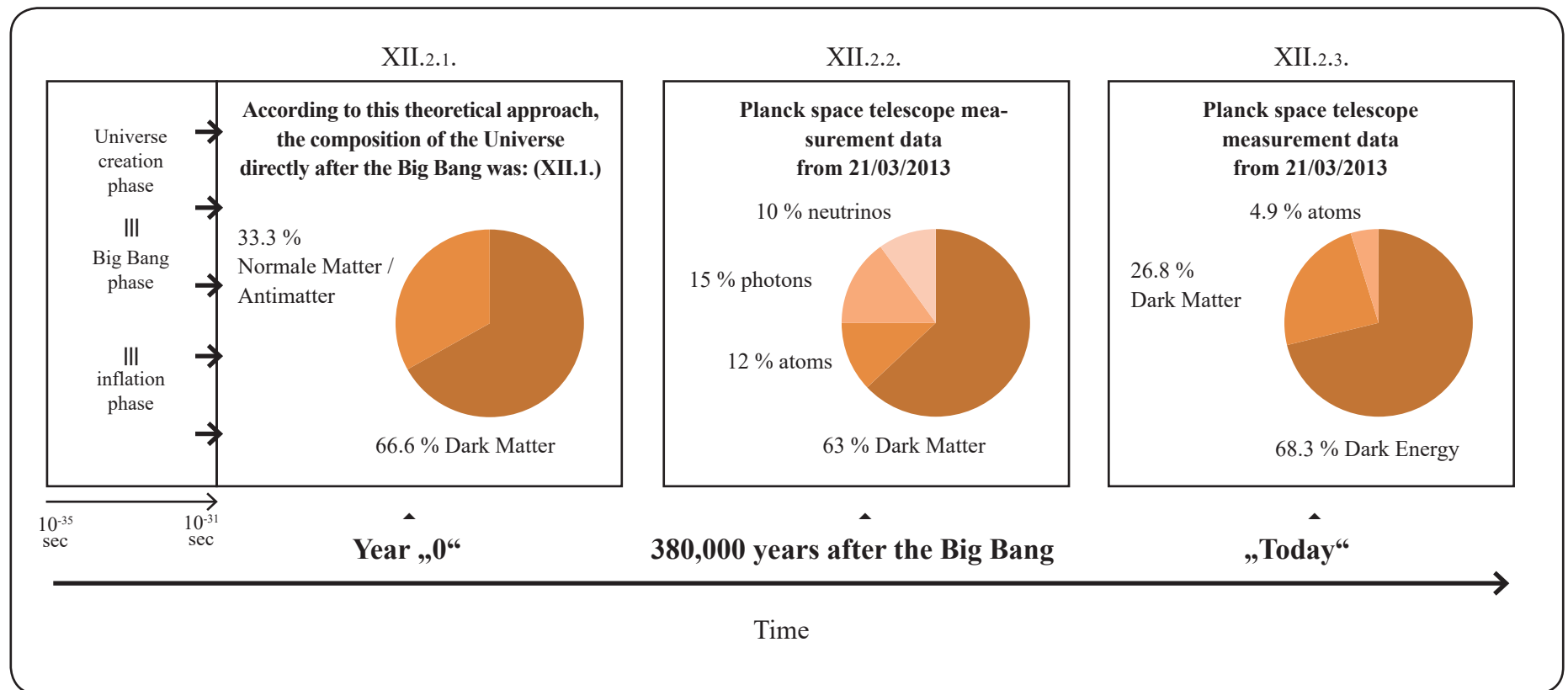
This leads to the construction of the extremely highly massive charge-neutral $(\overline{q}_0 + q_0 \equiv 0)$ -structure entity $(\overline{G})_G$, from which the fundamental atom of Dark Matter (D-atom) then develops together with other Dark Matter elementary particles (${}_0R; {}_2\nu_1, {}_2\nu_2, {}_1\nu_3$), 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: The development process of the Universe from the Big Bang until Today (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: Overall:

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

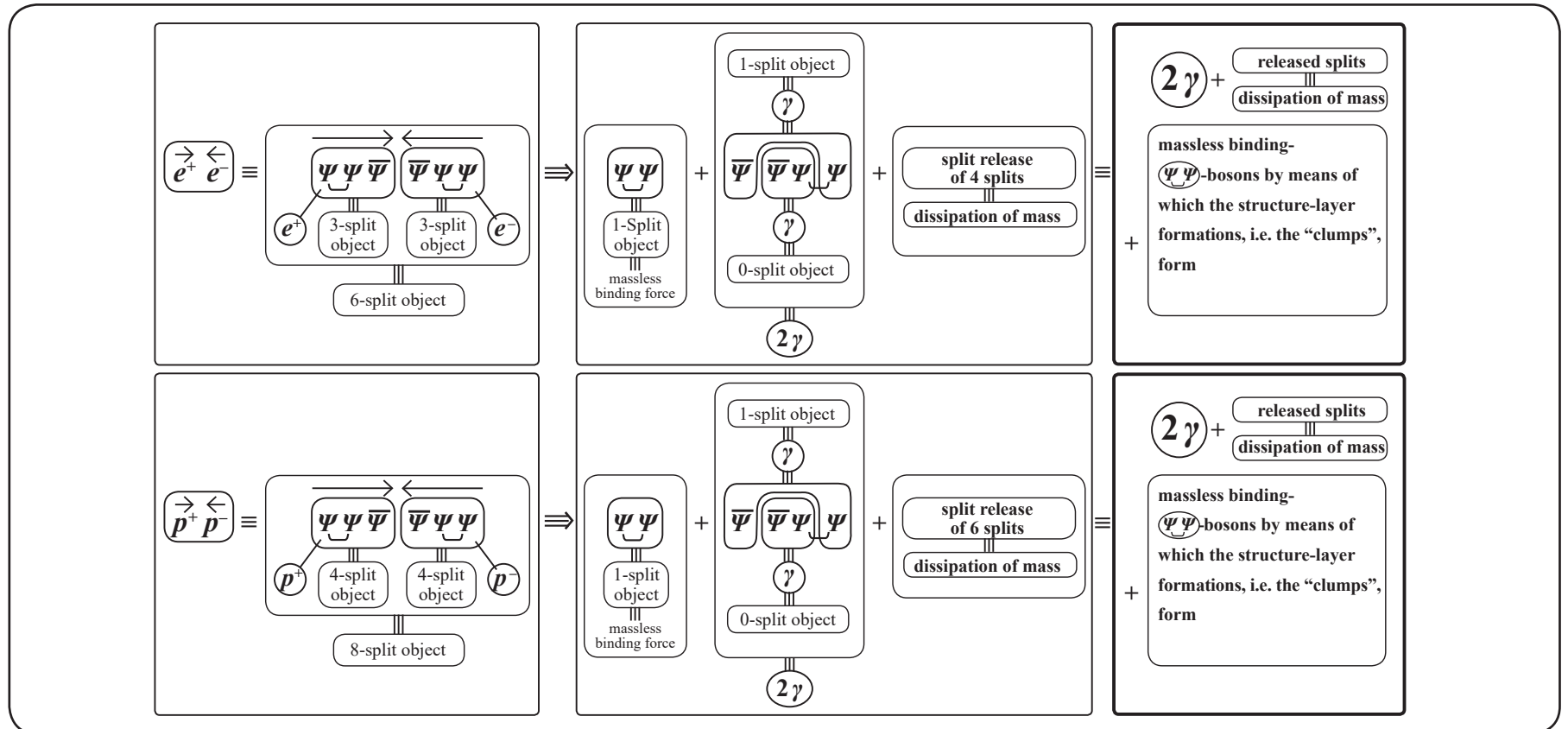


(8.1) \Rightarrow

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.) \rightarrow (XI.36.), there were so-called annihilation processes

$(e^+ e^- \rightarrow 2\gamma + \dots)$ and $(p^+ p^- \rightarrow 2\gamma + \dots)$ 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.)):



8.1 \Rightarrow

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 % \cong 12% atoms, 15% photons, 6.3% neutrinos

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.),

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

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 \Rightarrow Thus:

For each elementary particle set, the Universe is fundamentally, exclusively, and inevitably constructed by the construction process $D_{13 \text{ splits}}^{(13)} \Psi(x) \equiv \Psi^{(27)}(x, 13 \text{ splits})$ see III.1. \rightarrow 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 $\Psi_{\text{U}}^{(19)}(x, 13 \text{ splits}) \equiv \Psi-19 \equiv \text{inner-structural composition and order system of the Universe} \equiv \text{Universe Code } \Psi-19$.

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.

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. V.7., XI.36.)

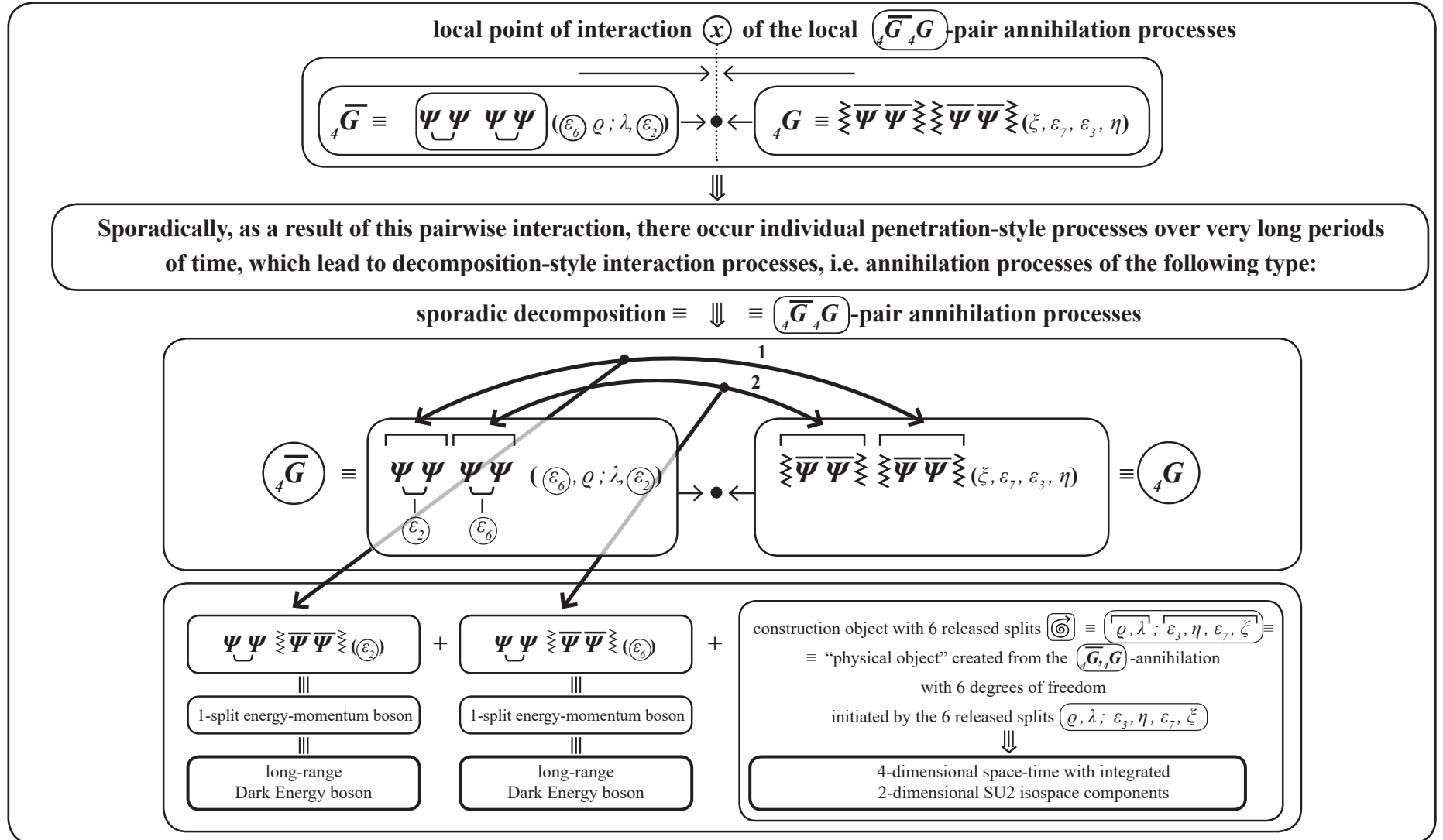
Thus: In every interaction and transformation process of any single event in the Universe, the total number of split must be 13 in each elementary set. No matter what this implies.


Hence: This principle of split conservation must also be satisfied by annihilation processes.


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

XII.9.

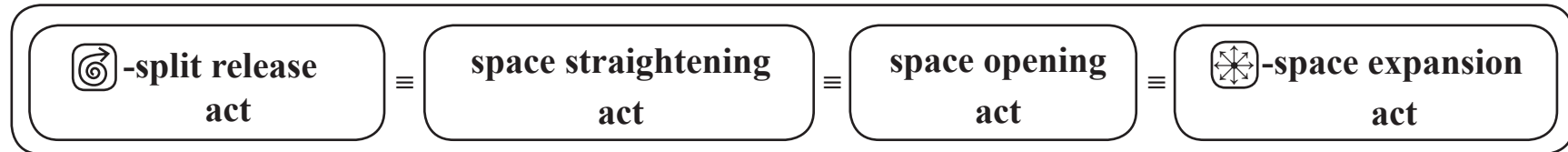
8





⑧.2 \Rightarrow From XII.9., it follows: The local interaction point $x = \bullet$ of the $(\overline{G}_4 G_4)$ -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.





In 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 \equiv point curvature) as , and the inverse act, namely (split release \equiv point straightening), as , then we see that:

XII.14.

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

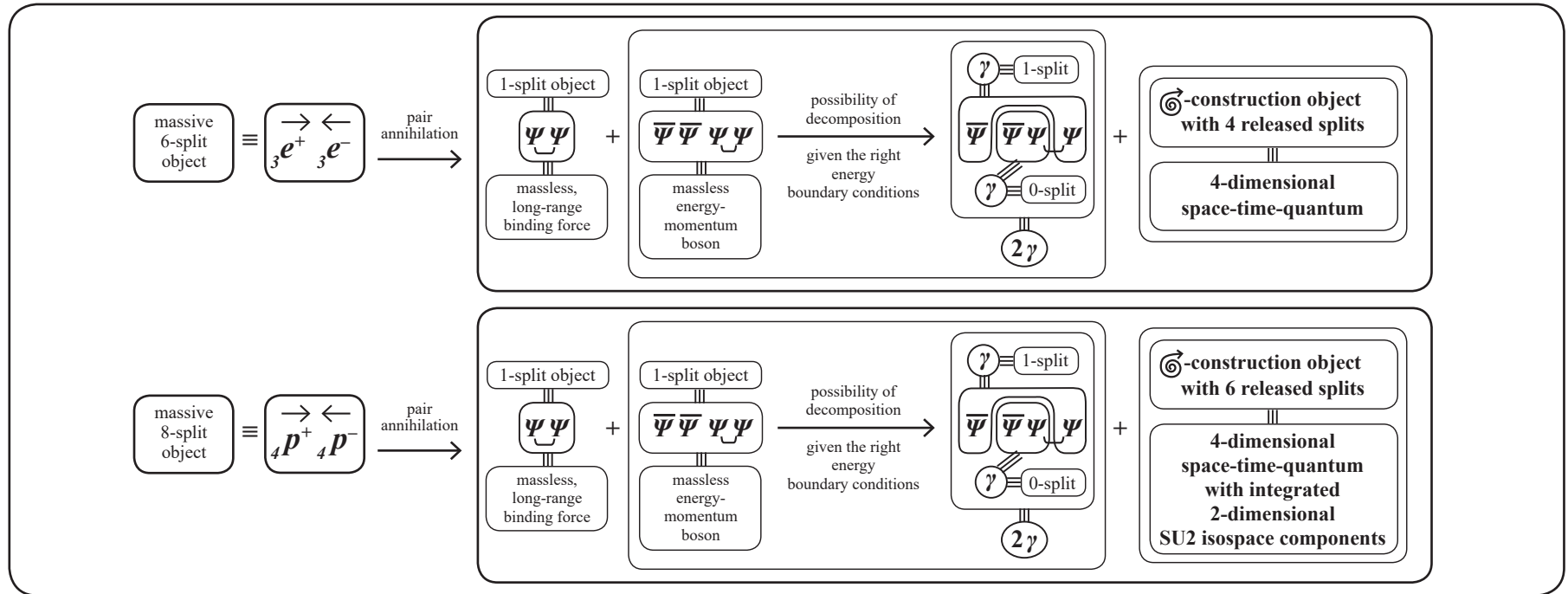
It follows that:

XII.15.

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

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

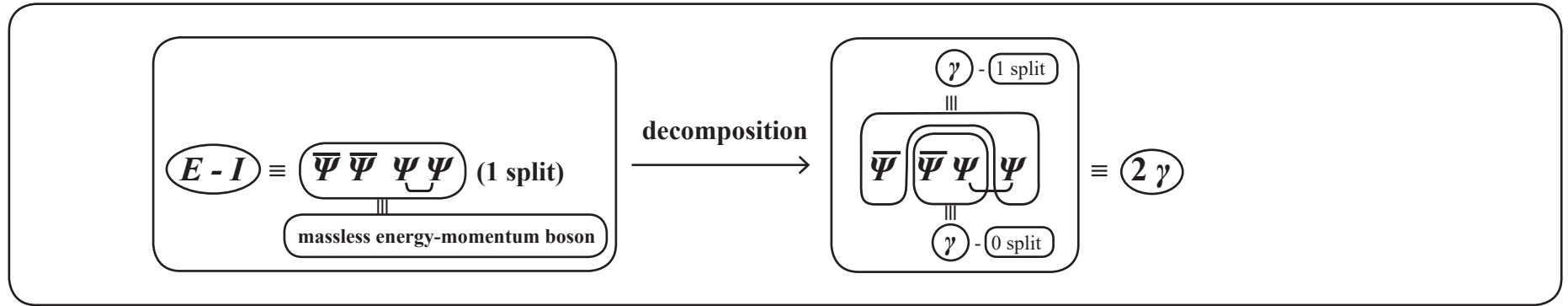
The same principle as for Dark Matter annihilation occurs with the annihilation processes of Normal Matter/Antimatter:



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 $(\bar{G}_4 G_4)$, because of the inner-structural separation elements $\approx \approx \approx$.

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 (\bar{G}_4, G_4) 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 (\bar{G}_4, G_4) 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:

XII.10.

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

as is consistent with reality.

The Dark Energy bosons thus created from the pairwise annihilation of mass **XII.9.**, **XII.12.**, **XII.17.**, **XII.33.** are automatically, inevitably, and necessarily,

by the **highest conservation principle of all events in the Universe** \equiv
 \equiv **conservation of 13 splits per elementary set,**
applicable to both Dark Matter and Normal Matter/Antimatter ,

coupled to the construction of an object with **4 or 4+2 released splits** ,
 i.e. a physical “construction” built from the **4 or 4+2 splits released** from the pairwise annihilation
 of mass **XII.12.**, **XII.17.** in which these **released splits are incorporated** , and by means of which the
 expanding **4- or 4+2-dimensional elementary space structure entities** are constructed in every
 event associated with an annihilation process. In summary:

An expanding space is constructed with 4-dimensional space-time elementary units **⑥** (space-time-quantums)
 i.e. with an
 and integrated

- “outer” 4-dimensional space-time structure(4-dimensional space-time-quantums **⑥**)
- “inner” 2-dimensional SU2 structure (isospace in case of normal matter)
 as is consistent with reality.
- “inner” 2-dimensional structure analogously to the isospace in the case of dark matter,
 which has to be proven experimentally and probably has to do with a „gravitational charge“.

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)	$\boxed{\Psi\Psi\bar{\Psi}} (\epsilon_9, \epsilon_8)$	≡ 2-split fermion
neutrino ₂	(ν_2)	$\boxed{\bar{\Psi}\Psi\Psi} (\epsilon_4, \epsilon_5)$	≡ 2-split fermion
neutrino ₃	(ν_3)	$\boxed{\Psi\bar{\Psi}\Psi} (\epsilon_1)$	≡ 1-split fermion
anti-gravitational boson	(\widehat{G})	$\boxed{\Psi\Psi} \text{---} \boxed{\Psi\Psi} (\epsilon_6, \varrho; \lambda, \epsilon_2)$	≡ 4-split boson
repulsive-Boson	(R_ϱ)	$\boxed{\bar{\Psi}} \text{---} \boxed{\bar{\Psi}} (0)$	≡ 0-split boson
gravitational boson	(G)	$\boxed{\Xi\bar{\Psi}\bar{\Psi}\Xi} \text{---} \boxed{\bar{\Psi}\bar{\Psi}\Xi\Xi} (\xi, \epsilon_7, \epsilon_3, \eta)$	≡ 4-split boson

Component ② ≡ 4.9 % ≡ Normal Matter/Antimatter

		Inner-Structural Particle Composition	
proton (antiproton*)	$(p^+)(p^-)$	$\boxed{\Psi\Psi\bar{\Psi}} (\epsilon_9, \xi, \varrho, \epsilon_8)$	≡ 4-split fermion
electron (positron*)	$(e^+)(e^-)$	$\boxed{\bar{\Psi}\Psi\Psi} (\epsilon_4, \eta, \epsilon_5)$	≡ 3-split fermion
neutrino	(ν)	$\boxed{\Psi\bar{\Psi}\Psi} (\epsilon_1)$	≡ 1-split fermion
strong force	(St)	$\boxed{\Psi\Psi} (\lambda, \epsilon_2)$	≡ 2-split boson
energy-momentum	$(E-I)$	$\boxed{\bar{\Psi}\Psi\Psi\bar{\Psi}} (\epsilon_6, \epsilon_3)$	≡ 2-split boson
partial decomposition into	$(\gamma)(Z)$	$\boxed{\bar{\Psi}\Psi} \text{---} \boxed{\Psi\bar{\Psi}} (\epsilon_6, \epsilon_3)$	⇓
electromag. force	(γ)	$\boxed{\bar{\Psi}\Psi} (0 \text{ Split})$	≡ 0-split boson
weak force	(Z)	$\boxed{\Psi\bar{\Psi}} (\epsilon_6, \epsilon_3)$	≡ 2-split boson
gravitation	(G)	$\boxed{\Xi\bar{\Psi}\bar{\Psi}\Xi} \text{---} \boxed{\bar{\Psi}\bar{\Psi}\Xi\Xi} (\epsilon_7)$	≡ 1-split boson
as well as the resulting annihilation end products $((e^+, e^-, p^+, p^-))$, see XI.29.			

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

- of which 28.5% \equiv energy-momentum bosons $(\bar{\Psi} \bar{\Psi} \Psi \Psi)$ (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 % \equiv energy-momentum bosons $(\tilde{\bar{\Psi}} \tilde{\bar{\Psi}} \tilde{\Psi} \tilde{\Psi})$ (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.)

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/Antimatter
 - Dark Energy with the coupled construction of expanding 4-dimensional space-time, developed from one and the same preformation structure $\Psi_{\text{U}}^{(19)}$ 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 $\Psi_{\text{U}}^{(19)} \equiv \text{V.7.}$, 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 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/Antimatter
- as well as Dark Energy with the coupled construction of expanding 4-dimensional space-time,

are inner-structurally created, composed, and developed.

XIII.2.1.

- And this in turn means:

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

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

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

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

or:

$\Psi_{\text{U}}^{(19)} \equiv \Psi - 19 \equiv \text{V.7.}$ is the Universe Code $\Psi - 19$.