

Norbert Winter

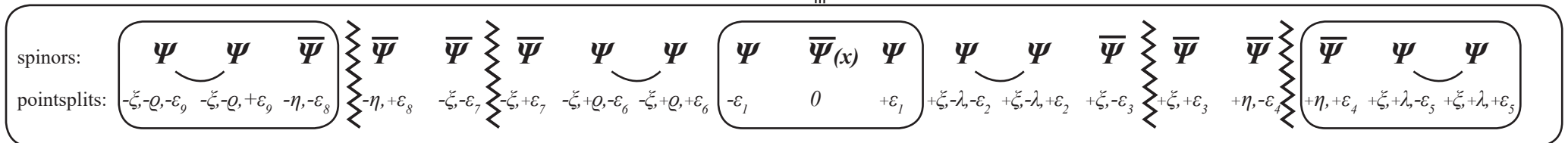
UC-3

The Universe Code Ψ -19,

- the creation system of the big bang (rupture of \bar{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 =

$(p^+, e^-, \nu; St, \gamma, Z, G) \equiv$ H-atom given suitable energy boundary conditions

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





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 ${}_3G$) 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

**The universe code Ψ -19,
the unified composition and order system of the universe**

≡ 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)



Following UC-1 and UC-2, we continue with the paper UC-3:

The present work „UC-3“ 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 Big Bang: causes, inner composition, consequences.

The inevitable rupture of the anti-gravitational force boson ${}_5\bar{G}$.

Each phase of the dynamic event: before the Big Bang, Big Bang, after the Big Bang.

The fragments after the rupture.

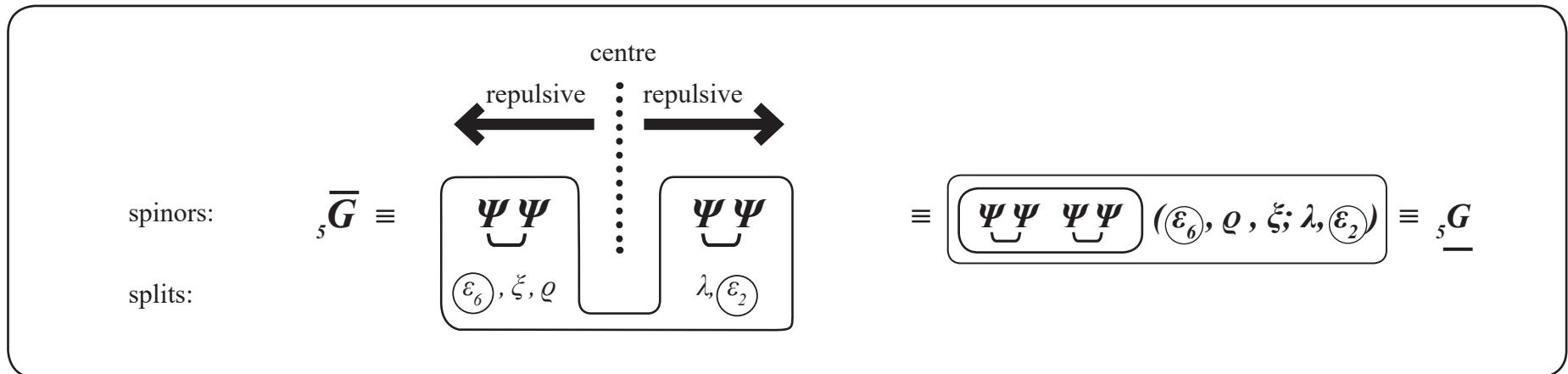
In UC-2 we saw how the Primordial Universe formed as the first ever manifestation of reality more than 13.8 billion years ago (most extremely small, essentially a “tiny point” with mass). It was shown that the absolutely dominant force formation in this Primordial Universe was the centrally-outwards-acting

most extremely massive repulsive force ${}_5\bar{G} \equiv$  $(\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2)$

(see **V.11.**), whose **inner structure** and **outer action** will now be investigated in detail:

By **V.6.**, \bar{G} is a centrally localized repulsive force, i.e.

VIII.1.



Due to its **high split density of 5 splits**, by **VI.3.5.**, ${}_5\overline{G}$ is an unstable, extremely massive and therefore extremely short-range (range $\sim 10^{-18}$ cm), most extremely strongly repulsive force (see **V.6.**).

Thus: ${}_5\overline{G}$ acts in a most extremely short-ranged, most extremely repulsive manner from the centre of the Primordial Universe outwards.

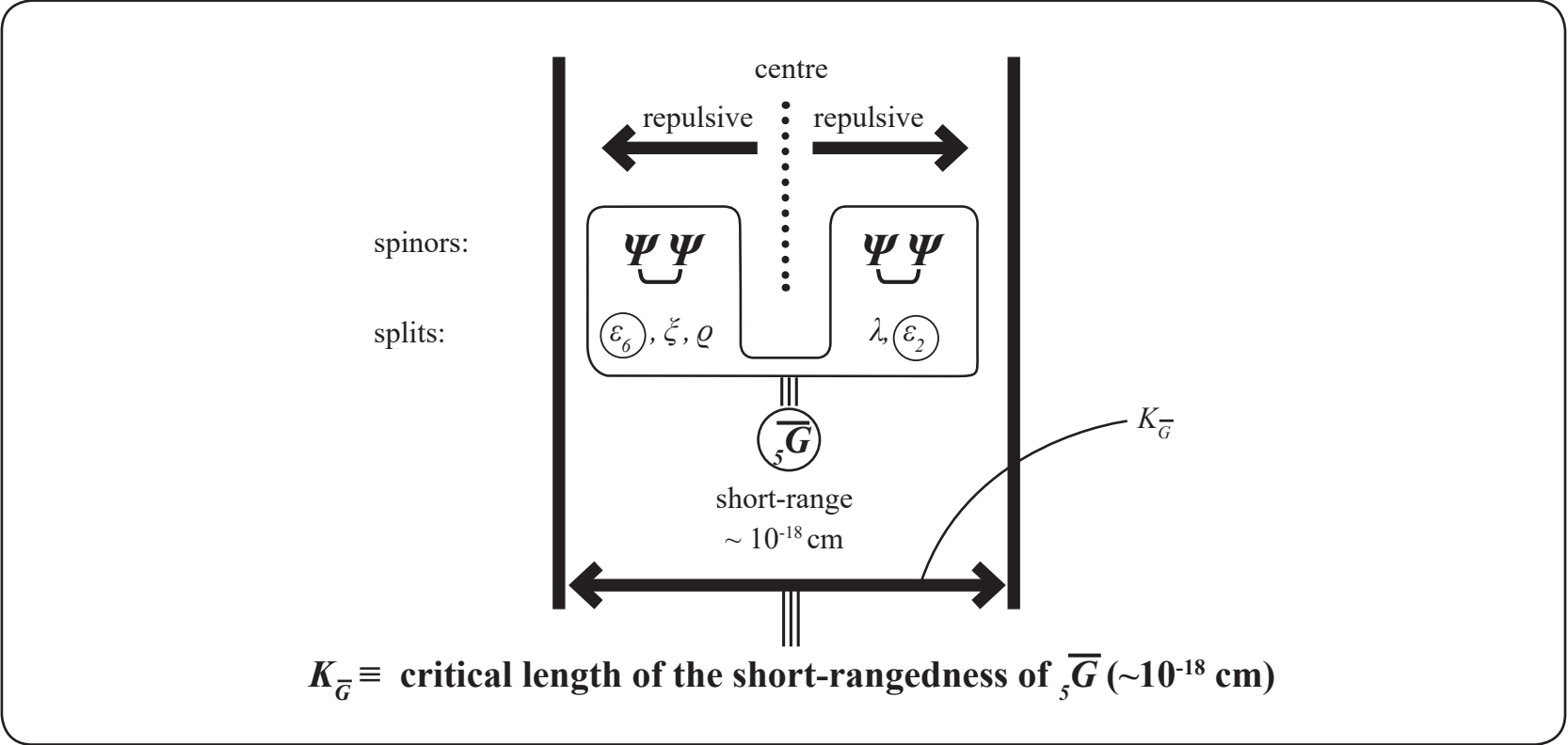
In order to analyse the consequences of this short-range, repulsive force action, we must examine it “step by step” in full detail.

To do this, we must first analyse the physical meaning of a short-range force. For example, we know from Cern the exact measurements of the weak force Z (2-split object), which has a mass of around 125 GeV and therefore a range of around 10^{-15} cm.

It seems therefore entirely reasonable to conclude that, as a **5-split** object (**VI.3.5.**), the dominant repulsive anti-gravitational force ${}_5\overline{G} \equiv \boxed{\Psi\Psi} \text{---} \boxed{\Psi\Psi} (\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2)$ in the Primordial Universe more than 13.8 billion years ago has a significantly higher mass than the weak force Z , which is a **2-split** object (see **VI.3.2.**).

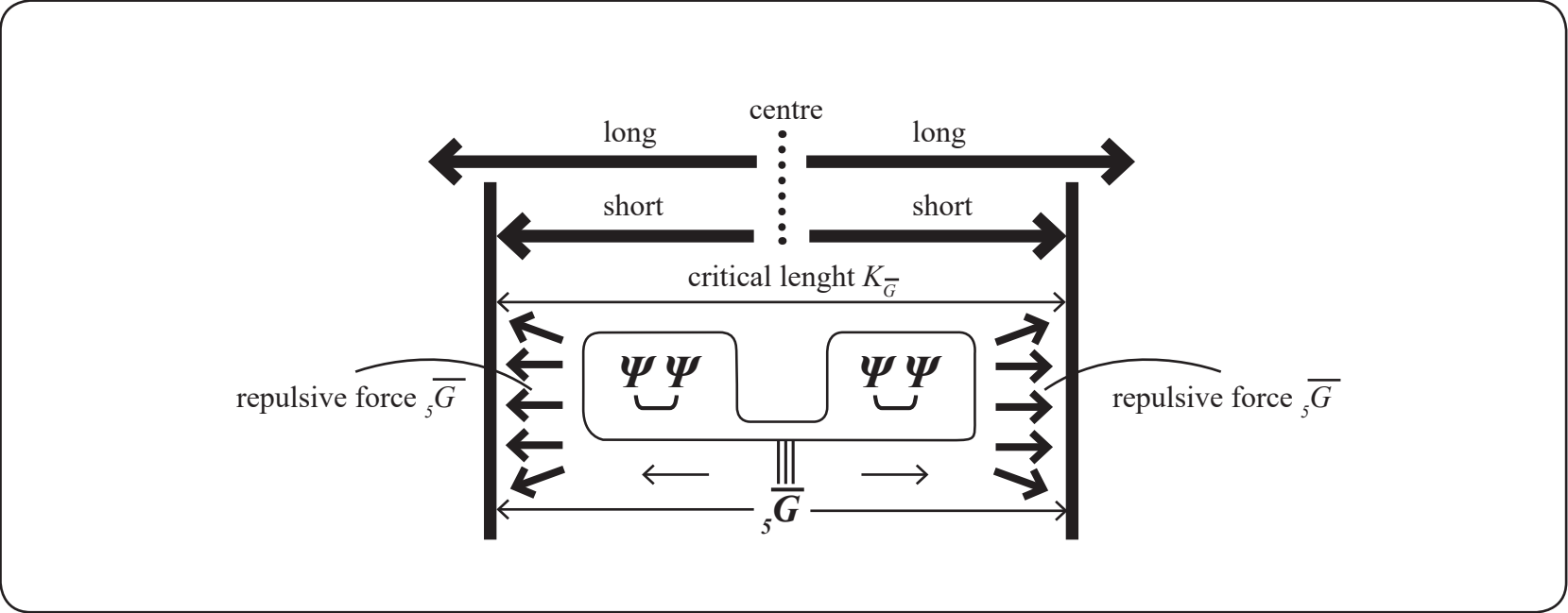
Therefore, the **range of the repulsive anti-gravitational force ${}_5\overline{G} \ll 10^{-14}$ cm (ca. 10^{-18} cm (?))**, and hence the dominant force ${}_5\overline{G}$ in the Primordial Universe is as follows:

VIII.2.



Thus: There exists a critical length K_G within which this force ${}_5\overline{G}$ acts as a short-range force. Due to the repulsive action of ${}_5\overline{G}$ outwards from the centre of the Primordial Universe VII.9, more than 13.8 billion years ago, the following therefore occurs before the Big Bang:

VIII.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 ${}_5\bar{G}$ necessarily reaches the (critical length $K (\sim 10^{-18} \text{ cm})$), beyond which the force ${}_5\bar{G}$ cannot extend due to its extremely high mass structure (\equiv short-range):

The mass structure of

$${}_5\overline{G} \equiv \left[\begin{array}{c} \underbrace{\Psi\Psi} \\ \dots \varepsilon_6 \dots \end{array} \right] \text{---} \left[\begin{array}{c} \underbrace{\Psi\Psi} \\ \dots \varepsilon_2 \dots \end{array} \right] \equiv {}_5\overline{G}(\varepsilon_6, \varrho, \xi; \lambda, \varepsilon_2)$$

is concretely and inevitably associated with

and “imprinted” onto the spinor configuration $\overline{G} \equiv \underbrace{\Psi\Psi} \underbrace{\Psi\Psi}$ by the 2 circled ε_6 - and ε_2 -splits, i.e. the point splits that are **only** structurally available in the **spinor configuration \overline{G}** (see **VI.2.5.**),

Hence: Due to the composition of its basis, ${}_5\overline{G} \equiv \left[\begin{array}{c} \underbrace{\Psi\Psi} \\ \dots \varepsilon_6 \dots \end{array} \right] \text{---} \left[\begin{array}{c} \underbrace{\Psi\Psi} \\ \dots \varepsilon_2 \dots \end{array} \right]$ inevitably contains at least the

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 $K_{\overline{G}}$** in **VIII.3.**

VIII.4.

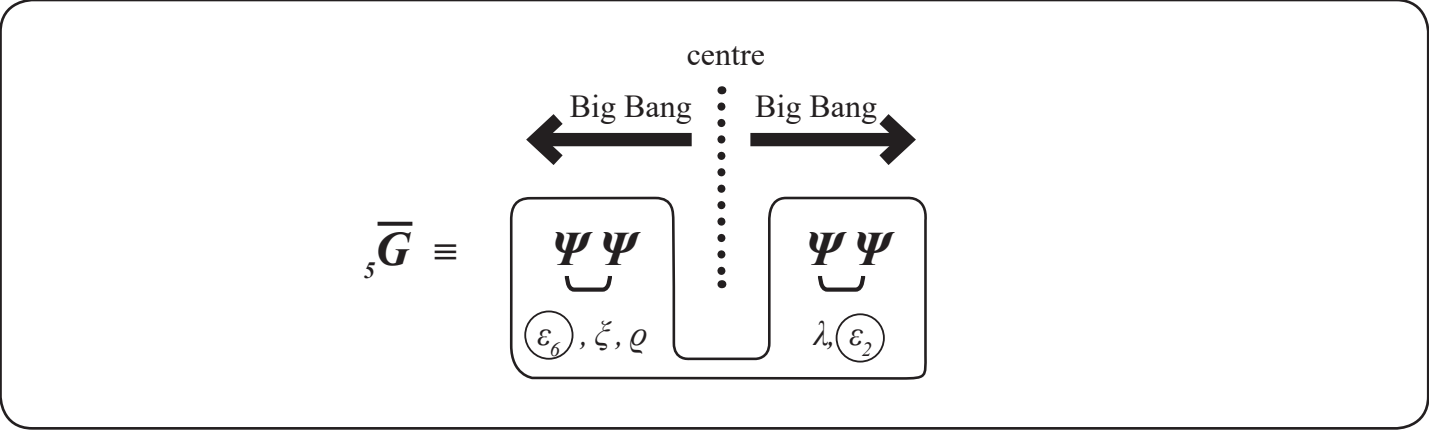
VIII.5.

However, **this limitation to the critical length K** naturally acts against the intrinsically predetermined, most extremely strong **repulsive anti-gravitational force** ${}_5\bar{G} \equiv \Psi \Psi \quad \Psi \Psi$ 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.

In the following, we shall see in detail how this “existential rupture”, known as the Big Bang, unfolded from the centre of the most extremely small Primordial Universe **VII.4.**, and how the other parts of the Primordial Universe were affected by this Big Bang, which fragments were left after the Big Bang, and how these **Big Bang rupture fragments** reformed to construct a new Universe, namely the post-Big Bang Universe:

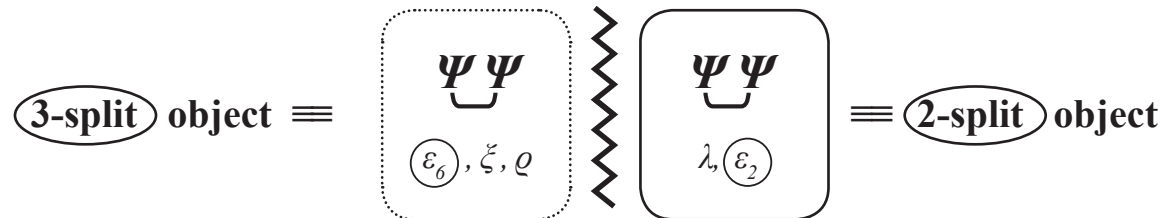
We begin by examining the consequences of the rupture (Big Bang) on the anti-gravitational force \bar{G} that caused it. The rupture of ${}_5\bar{G}$ itself may be represented as follows:

VIII.6.



VIII.7.

Thus: After the rupture of ${}_5\bar{G} \equiv \underbrace{\Psi\Psi} \quad \underbrace{\Psi\Psi}$ into two structurally identical fragments



by the identity principle **I.5.**, only one of these fragments can “survive” after the Big Bang and continue to exist.

VIII.8.

By the minimality principle **I.0.3.** the “surviving” part must be the simpler of the two, namely the 2-split object $\equiv \underbrace{\Psi\Psi}_{(\varepsilon_2, \lambda)}$.

The more complex 3-split object $\equiv \underbrace{\Psi\Psi}_{(\varepsilon_6, \xi, \rho)}$ then opens up – in accordance with the identity principle **I.5.** – thus becoming part of a new structure.

This means:

After the Big Bang, i.e. after the most extremely strong repulsion act from the centre outwards (VIII.7.), the very first thing that forms is a boson that survives the Big Bang,

(2-split) boson $\equiv \left(\Psi \Psi (\varepsilon_2, \lambda) \right)$, which acts attractively by (V.6.),

and which becomes the heart of the newly developing (elementary set of the post-Big Bang Universe).

It follows that:

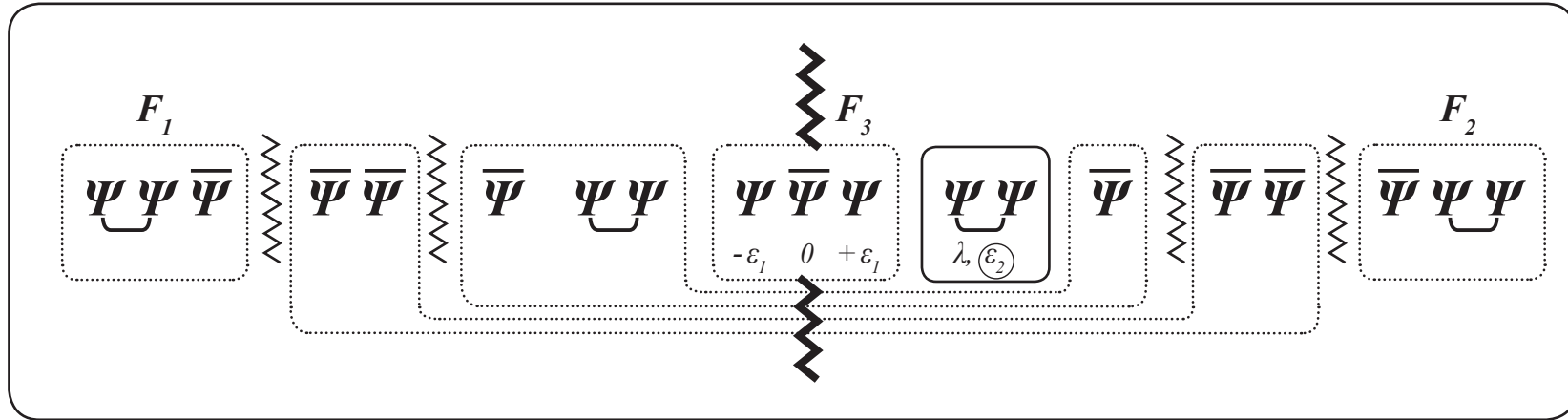
The (central force around which the elementary set of the post-Big Bang Universe forms) is the Big Bang fragment $\left(\Psi \Psi (\varepsilon_2, \lambda) \right)$, see (V.6.) (\equiv strong force).

VIII.9.

The (Big Bang repulsion act), which results in the rupture (VIII.7.) from the centre of the Primordial Universe (VII.9) outwards, does not only affect the (anti-gravitational force \bar{G}) that triggered this repulsion act, but also acts upon all other parts of the original Primordial Universe.

Hence, directly after the Big Bang, by VIII.6., VIII.7., VII.4., there is the following open situation:

VIII.10.



The dotted lines show how the formation after the Big Bang must unfold around the fixed central component

$\Psi \Psi (\varepsilon_2, \lambda)$, because:

- the preformation structure V.1. still holds
 - the identity principle I.5. still holds
- and
- the minimality principle I.0.3. still holds

leading the post-Big Bang Universe to develop the structure represented in VIII.10.

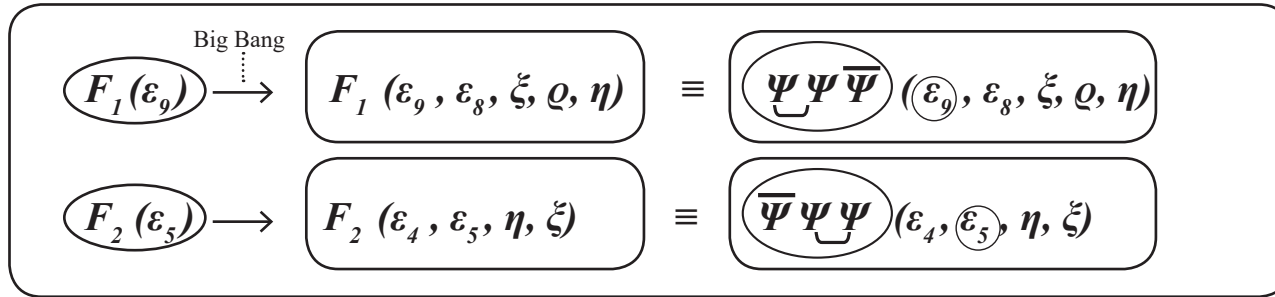
The physical consequences that this has on the structuring and reformation of the elementary set VIII.10. are examined in detail in the following section.

The Post-Big Bang Formation of Elementary Particle Sets **VIII.10.**:

- The creation of the strong force boson (strong interaction) and the energy-momentum boson from the fragments of the anti-gravitational force boson (\overline{G}) , which ruptured during the Big Bang, and the repulsive boson (R) .
- The skew symmetry (parity asymmetry) caused by the Big Bang in the energy-momentum boson created in the Big Bang.
- The new point split distribution (from the inside outwards) caused by the Big Bang (repulsion act).
- The formation of the proton (p^+) and the electron (e^-) .

The point split distribution after the Big Bang, i.e. after the Big Bang repulsion act **VIII.10.** unfolding from the inside outwards, satisfies the following: After the Big Bang, the point split distribution must be distributed outwards-maximally. This means that each of the outer formation entities in **VIII.10.**, namely (F_1) and (F_2) , must be maximally extended by point splits – as much as allowed by the preformation structure **V.1.** – by means of the repulsion act, unfolding from the inside outwards.

IX.1.



Since, after maximizing the point split distribution in VIII.10. from the inside outwards, only F_1 and F_2 (≥ 3 -split) objects, i.e. objects that have charge (see VI.3.3., VI.3.4.), the charges of F_1 and F_2 must neutralize each other so that the system is charge-neutral as a whole. Since a total of 7 different point splits are available for the formation of F_1 and F_2 - by IX.1., since both F_1 and F_2 must be ≥ 3 -Split objects, and finally since the split distribution in VIII.10. satisfies the property that the previously formed central component $\psi\psi(\varepsilon_2, \lambda) \equiv$ (surviving fragment from the Big Bang) (see VIII.10.) already contains the λ -split and therefore has consumed it, λ is no longer available for the (formation of F_2).

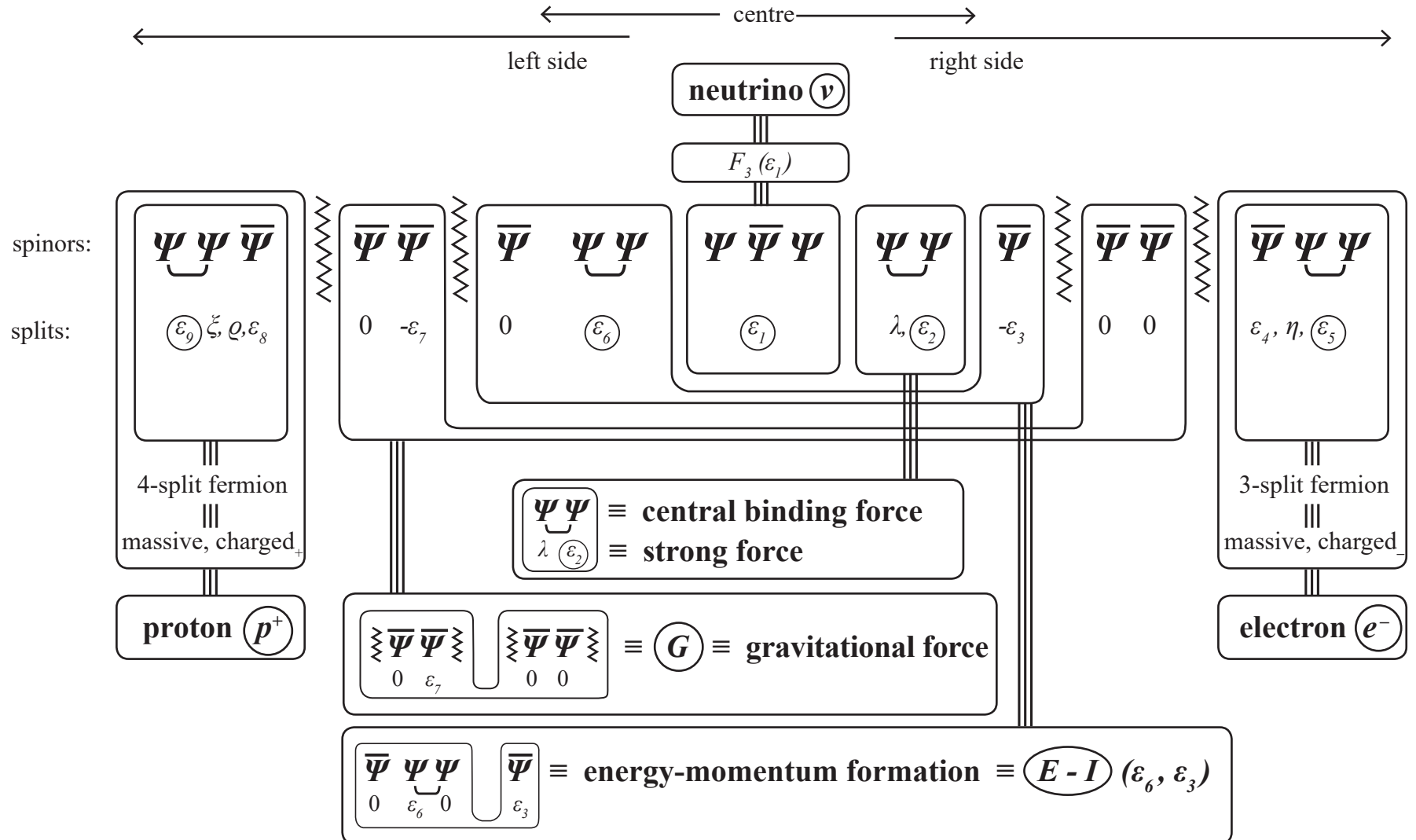
Hence: $F_1 \equiv$ $\psi\psi\bar{\psi}(\varepsilon_9, \varepsilon_8, \xi, \rho)$ and $F_2 \equiv$ $\bar{\psi}\psi\psi(\varepsilon_4, \varepsilon_5, \eta)$,

i.e. first $F_1 \equiv p^+$ then $F_2 \equiv e^-$ form together as an effectively interconnected process. This is precisely why $F_2 \equiv e^- \equiv$ electron, as a 3-split object, has a lower mass than $F_1 \equiv p^+ \equiv$ proton, which is a 4-split object.

The **shape and point split structure** of the **post-Big Bang Universe** is therefore as follows :

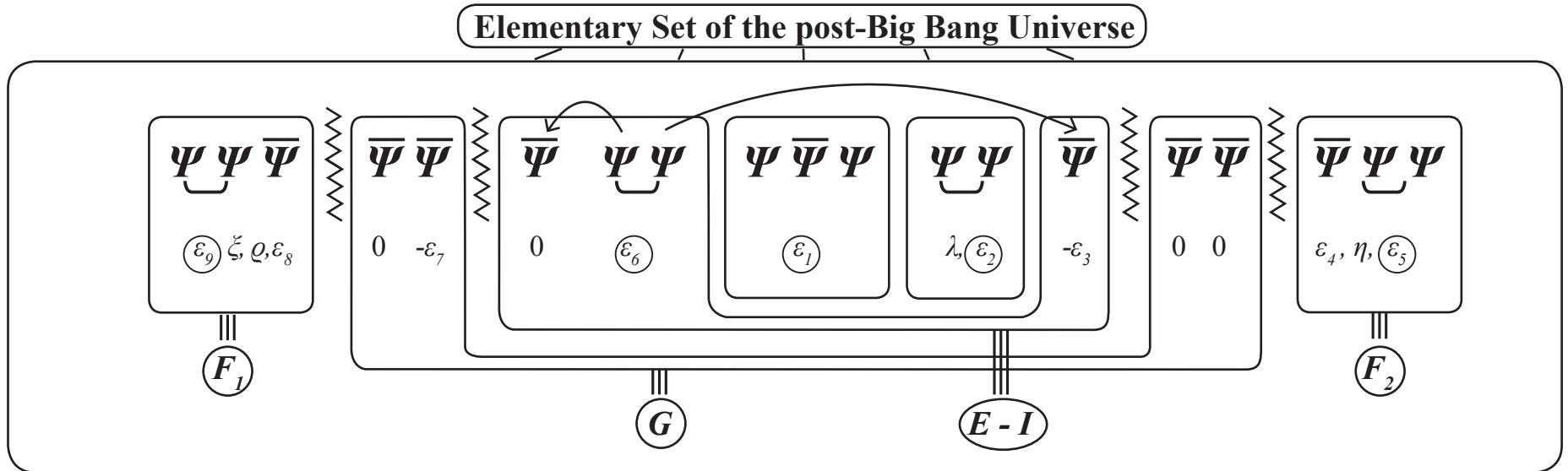
IX.2.

Elementary Set of the post-Big Bang Universe



After the Big Bang **VIII.10.** and before the final reformation, the Universe necessarily consists of the fragments and individual formations described in Chapter **VIII.**:

IX.2.1.



Thus, after the Big Bang, the following entities form:

IX.3.

$$\textcircled{St} \equiv \begin{array}{c} \underbrace{\Psi \Psi} \\ \lambda \quad \varepsilon_2 \end{array} \equiv \textcircled{St} (\lambda, \varepsilon_2) \equiv \text{strong interaction force boson}$$

IX.4.

$$\textcircled{E-I} \equiv \begin{array}{c} \bar{\Psi} \Psi \Psi \quad \bar{\Psi} \\ 0 \quad \varepsilon_6 \quad 0 \quad \varepsilon_3 \end{array} \equiv \textcircled{E-I} ((\varepsilon_6), \varepsilon_3) \equiv \text{energy-momentum boson}$$

created from the Big Bang repulsion act

and

IX.5.

$$\textcircled{G} \equiv \begin{array}{c} \underbrace{\underbrace{\bar{\Psi} \bar{\Psi}} \quad \underbrace{\bar{\Psi} \bar{\Psi}}} \\ 0 \quad \varepsilon_7 \quad 0 \quad 0 \end{array} \equiv \textcircled{G} (\varepsilon_7) \equiv \text{gravitational force boson}$$

And the following holds:

IX.6.

After the Big Bang \equiv repulsion rupturing act (see VIII.6.),

due to the “breakthrough” from short to long scales,

the gravitational force $\textcircled{G} \equiv$ IX.5. must be a long-range force, i.e. \textcircled{G} must be a ≤ 1 -split object by VI.3.1., as is indeed the case, as an ${}_1G (\varepsilon_7)$ -object.

Since the (4-split) fermion F_1 and the (3-split) fermion F_2 have opposite charges by IX.3. and therefore the sum of (F_1) and (F_2) is charge-neutral, the (energy-momentum) formation $(E - I) \equiv$ IX.4. must be an uncharged formation.

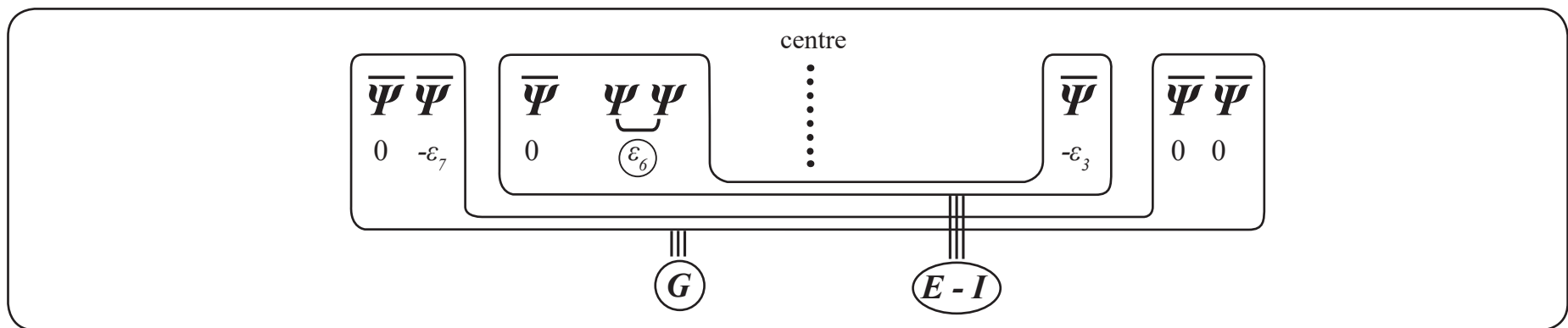
IX.7.

This means that, by VI.3.1. and VI.3.2. $(E - I)$ must be a (< 3)-split object, as is indeed the case as an $(E - I) (\varepsilon_6, \varepsilon_3)$ -object. Furthermore, the (energy-momentum) formation must be an (object with length dimension (-2)), namely (-1) for the energy and (-1) for the momentum,

as is indeed the case as an $\begin{array}{|c|c|c|c|} \hline \bar{\Psi} & \Psi & \Psi & \bar{\Psi} \\ \hline -\frac{1}{2} & -\frac{1}{2} & -\frac{1}{2} & -\frac{1}{2} \\ \hline \end{array} \equiv \begin{array}{|c|} \hline (E - I) \\ \hline -2, \text{ as } \dim \Psi = -\frac{1}{2} \\ \hline \end{array}$ -object.

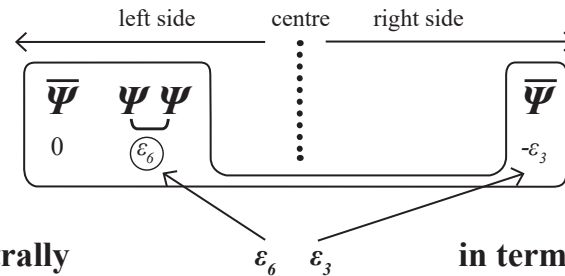
Thus: By IX.3., IX.6. and IX.7., there must necessarily and unequivocally form the following split density distribution in the (post-Big Bang Universe) for (the individual formations $(E - I)$ and (G))

IX.8.



Hence: The **energy-momentum** formation $(E - I) \equiv \overline{\Psi} \Psi \Psi \cup \overline{\Psi}$ created by the Big Bang repulsion act

IX.9.



is distributed centrally in terms of its point split structure, but not in terms of its shape structure. The “left side” has 3 basis spinors, whereas the “right side” has 1 basis spinor.

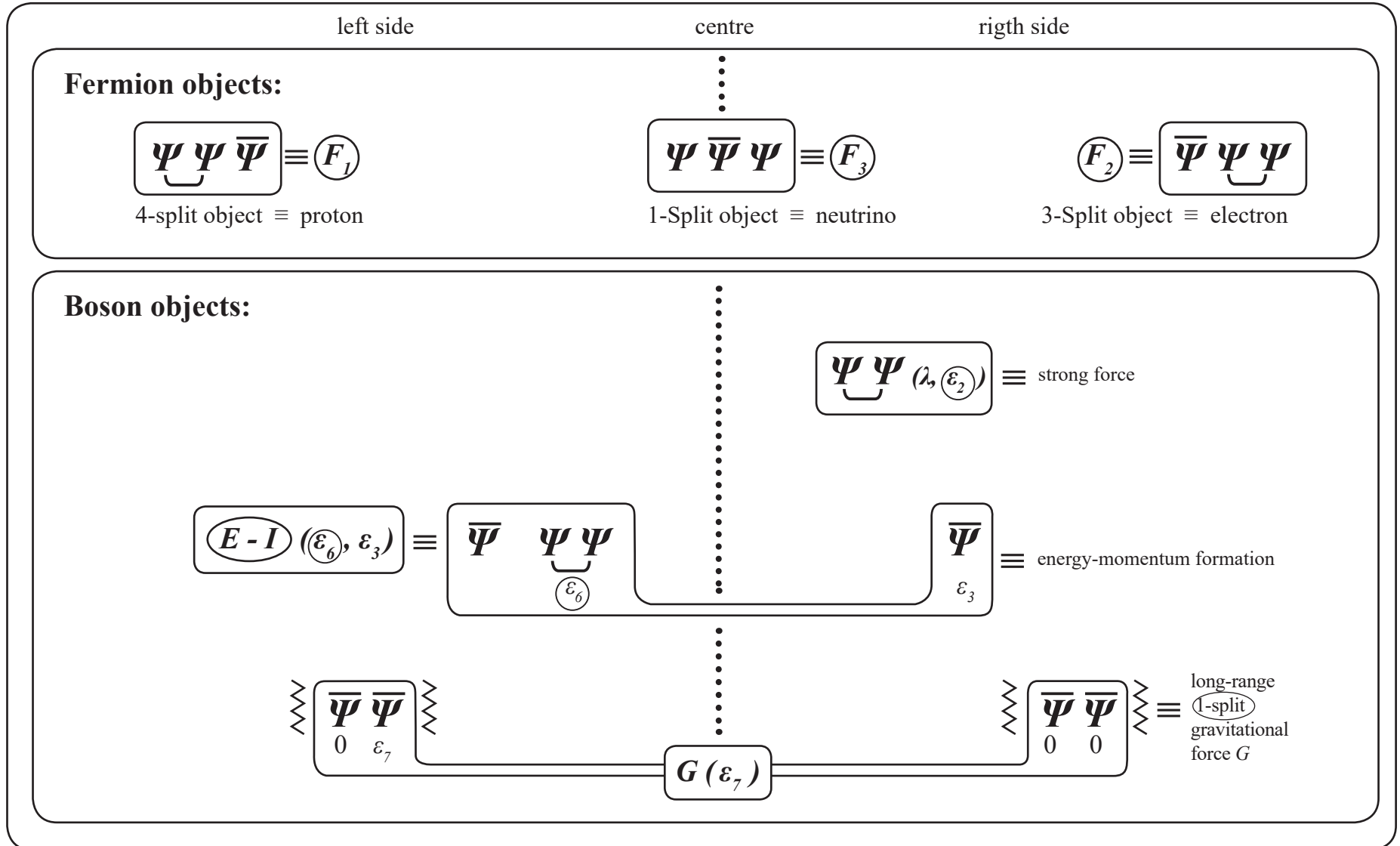
This means: The **skew symmetry** (\equiv parity asymmetry) inevitably created by the inner structure of the Big Bang (see VIII.10.) is **existential**, by which we mean: existence-creating, specifically $(E - I)$ -creating. This skew symmetry is **necessarily** and **therefore inevitably** caused by the unavoidable rupture-based structure of the Big Bang around 13.8 billion years ago, and is therefore **unavoidably predetermined**, or “imprinted”, in the events of the **post-Big Bang** Universe. It could only have happened this way, and not any other.

The energy-momentum formation $(E - I)$ forms after the Big Bang from the fragments of the repulsive anti-gravitational boson \overline{G} and the repulsion force boson R , both from before the Big Bang (VII.4., VIII.10.).

IX.9.1.



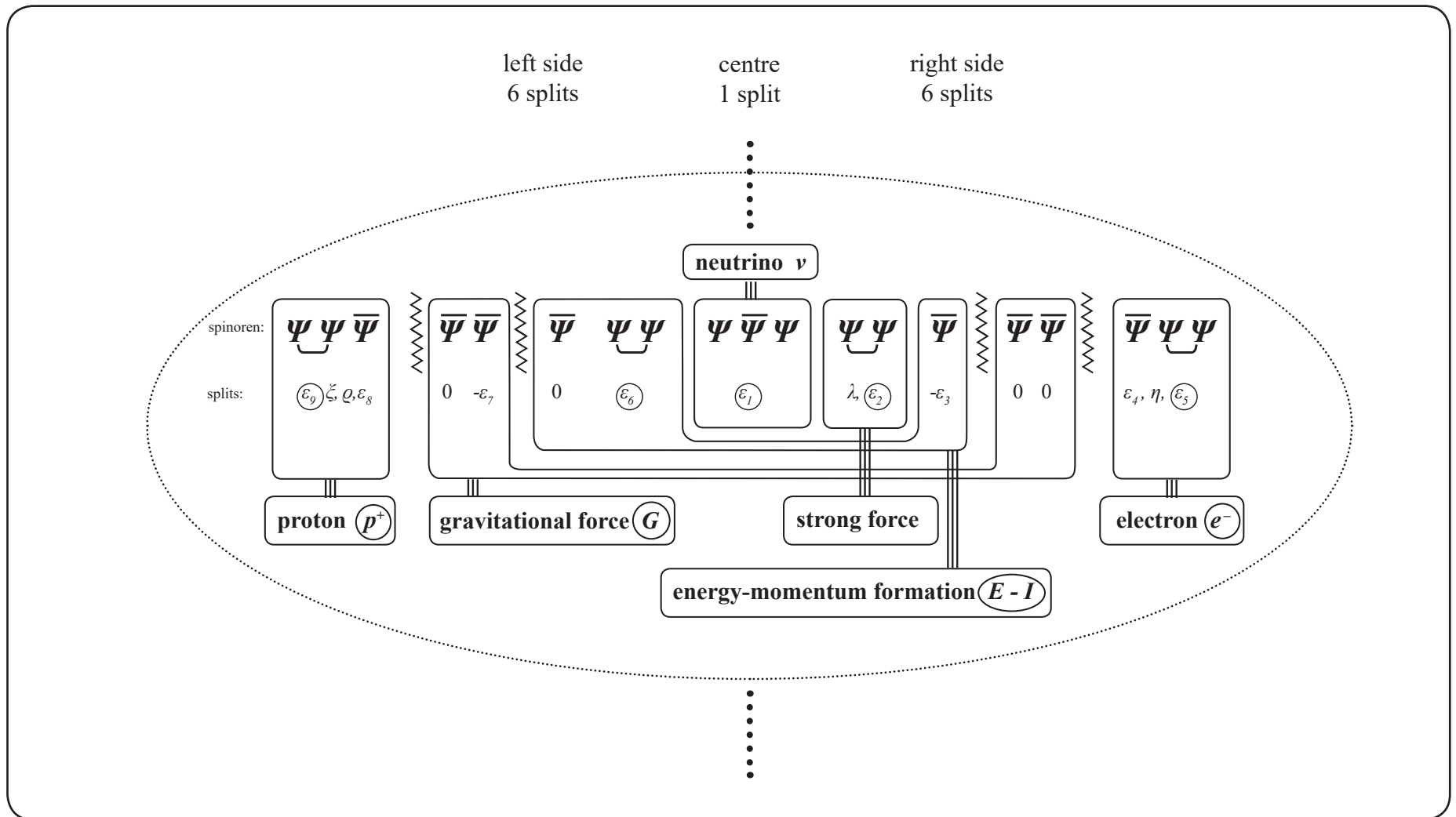
Thus, the individual components of the **post-Big Bang part of the Universe** that passes through the Big Bang – structurally generated from the centre of the Big Bang – form as follows:



IX.10.

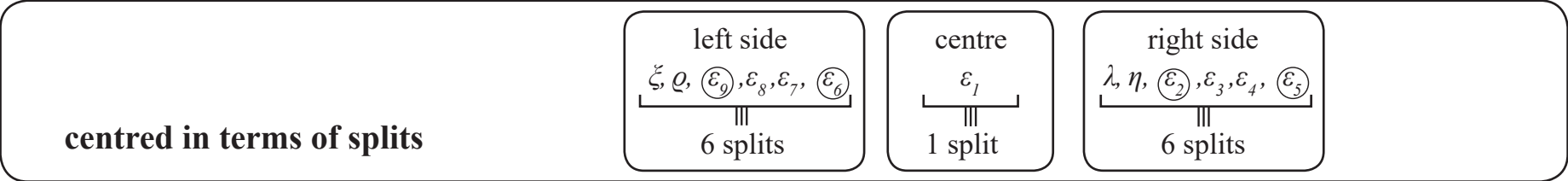
Thus: The **post-Big Bang part of the Universe**, which forms immediately after the Big Bang, and which passes through the Big Bang, has the following structure:

IX.11.

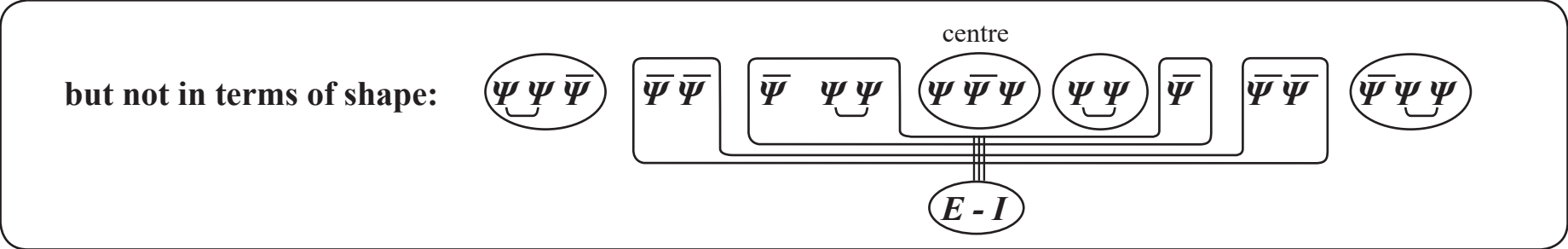


Thus: The elementary set of the **post-Big Bang part of the Universe**, which forms immediately after the Big Bang, and which passes through the Big Bang, has the following overall structure:

IX.12.



IX.13.



IX.14.

Thus: The **energy-momentum** $\equiv E - I$ which thus forms is the skew-symmetric **energy-momentum** formation $\equiv E - I \equiv$

$$\begin{matrix} \text{centre} \\ \bar{\Psi} \Psi \Psi \\ \vdots \\ \bar{\Psi} \\ 0 \quad \varepsilon_6 \quad \varepsilon_3 \end{matrix},$$

created from the Big Bang **VIII.10.** by **IX.8.**. In this phase of the **post-Big Bang part of the Universe**, directly after the Big Bang, the electromagnetic force and the weak force do not yet exist. The electromagnetic force is only created later along with the weak force – as will be shown in Chapter **X.**

One final remark:

By **IX.11.** the post-Big Bang elementary particle set that formed immediately after the Big Bang and which passes through the Big Bang consists of exactly 2 elementary particles, both of which have (≥ 3) point splits.

This means:

Since, by **VI.3.3.**, charge forms in elementary particles with a split density of (≥ 3) , there are only 2 charged elementary particles in **IX.11.**, namely:

- proton $p^+ \equiv \underbrace{\Psi \Psi \bar{\Psi}}_{(\varepsilon_9, \zeta, \varrho, \varepsilon_8)} \equiv \text{4-split elementary particle and}$
- electron $e^- \equiv \bar{\Psi} \underbrace{\Psi \Psi}_{(\varepsilon_4, \eta, \varepsilon_5)} \equiv \text{3-split elementary particle}$

where p^+ has a $(+)$ -charge by the standardized definition **VI.3.3.**, due to its $(\Psi \Psi \bar{\Psi})$ -spinor configuration, and e^- has a $(-)$ -charge by the standardized definition **VI.3.3.**, due to its $(\bar{\Psi} \Psi \Psi)$ -spinor configuration, with $(q^+ + q^-) \equiv 0$.

It follows that the elementary particle set **IX.11.** is neutral when viewed as a single system, which is necessarily true anyway, because of the global formation structure.

But this also means that:

IX.15.

The post-Big Bang elementary particle set IX.11. that forms after the Big Bang has completed contains: precisely one elementary charge (q_o) , which by VI.3.3. exists

- in both a positive form $(q_o)^+$ (proton p^+)

and

- in a negative form $(q_o)^-$ (electron e^-),

which neutralize each other, as they have identical absolute magnitudes $|(q_o)|$, meaning that the elementary particle set IX.11. is charge-neutral as a whole.

This also means that the elementary charge (q_o) is quantized, and this quantized magnitude $|(q_o)|$ is the underlying reason for the neutralization $(q_o)^+ + (q_o)^- \equiv 0$ of the elementary particle set IX.11. as a whole.

The creation of the electromagnetic and weak force by partial decomposition of the energy-momentum boson.

The formation and development of the elementary particle set: p^+ , e^- , ν created by the Big Bang.

The strong-electromagnetic-weak-gravitational boson (St , γ , Z , G), namely the hydrogen atom.

As described in Chapter IX. the energy-momentum formation $(E - I)$ forms after the Big Bang:

X.1.

$$(E - I) \equiv \overline{\Psi} \underbrace{\Psi \Psi} \overline{\Psi} ((\varepsilon_6), \varepsilon_3)$$

created by the Big Bang repulsion act (see VIII.6.).

X.2.

This leads to a continuous formation process that creates the inner structure of every sub-system in the Universe.

X.3.

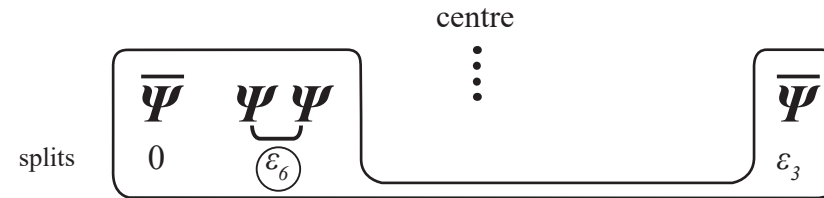
Sets of energy-momentum are continuously drawn from the reservoir of energy-momentum created in the Big Bang for the inner and outer construction of the post-Big Bang part of the Universe.

Hence: In terms of the energy-momentum $\overline{\Psi} \underbrace{\Psi \Psi} \overline{\Psi}$ of the individual components of the Universe, the following happens:

X.4.

extremely high-energy energy-momentum state, since created directly by the Big Bang:

extremely high-energy energy-momentum formation



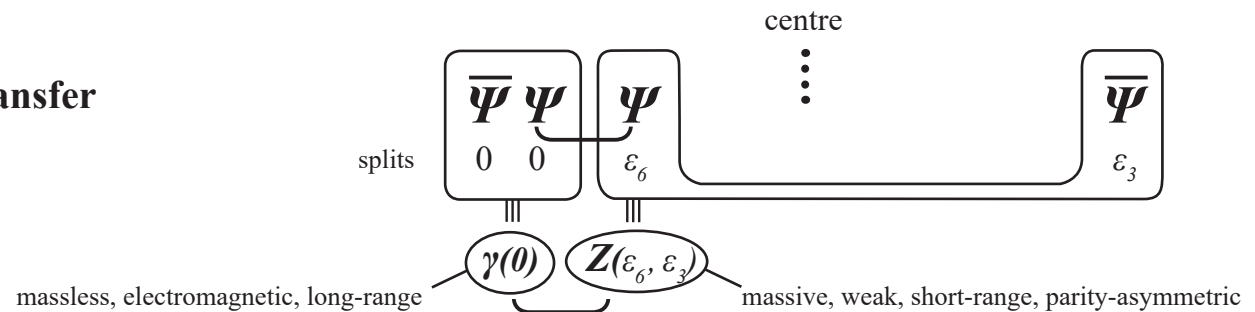
energy-momentum transfer:



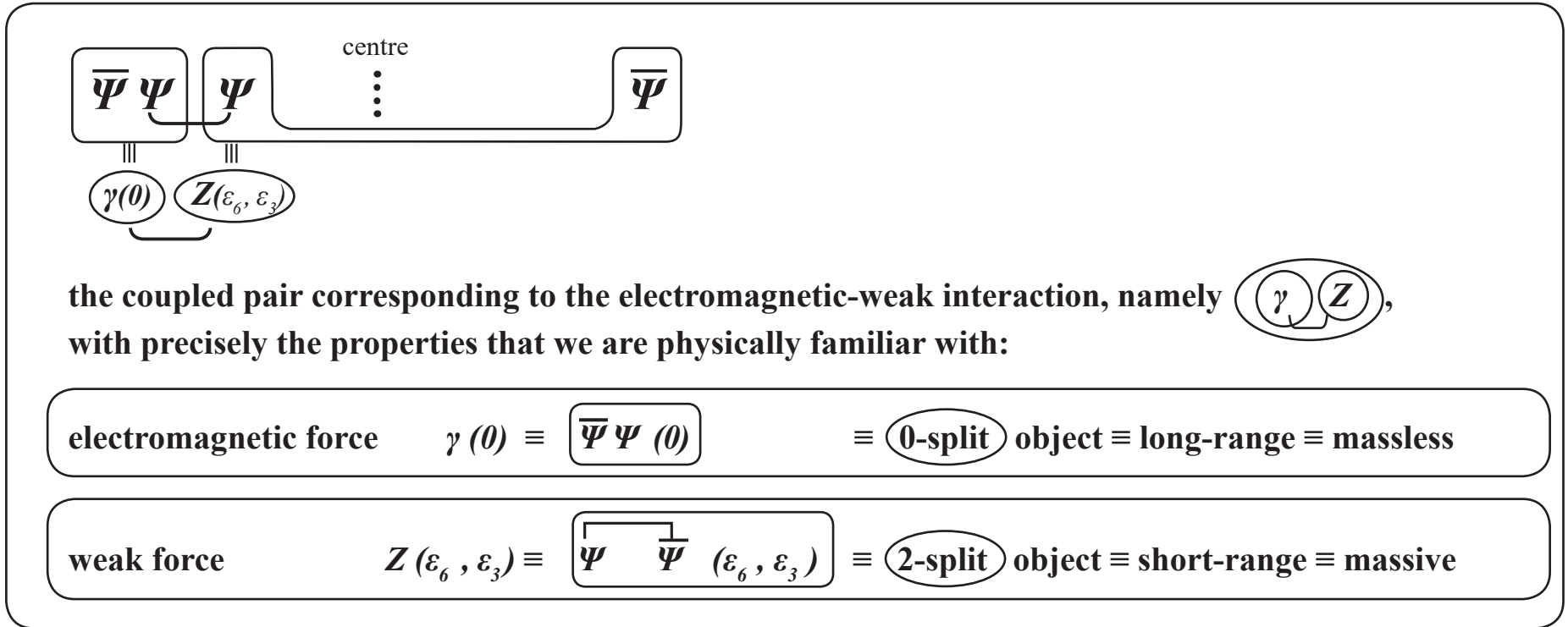
consumption of energy-momentum for structure formation in the post-Big Bang part of the Universe that passes through the Big Bang

weaker energy-momentum after completion of energy-momentum transfer

lower-energy formation state leading to decomposition



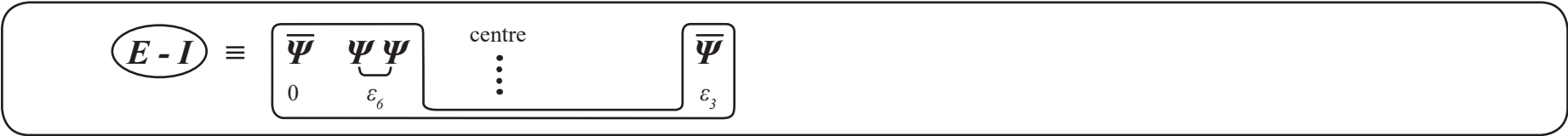
Chapter VII of GDE (The Law of Greatest Simplicity) and also Chapter VII of MLE (Matter, Logic, Existence...) show in detail that this formation is:



X.5.2. Thus: In certain sub-regions of the Universe, the energy-momentum formation $E - I$ decomposes into its lower-energy components γ Z . Hence: In these parts of the Universe, which include our solar system (light \equiv electromagnetic radiation), the electromagnetic and weak interaction is created from the energy-momentum formations (see X.4.).

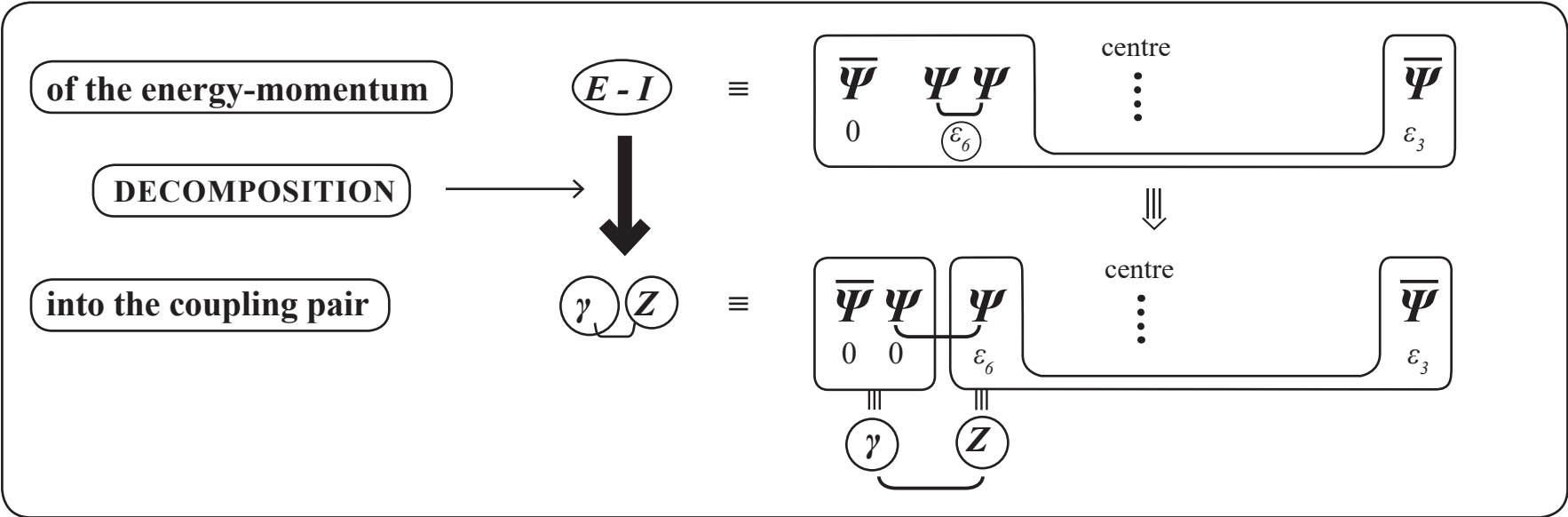
The skew symmetry (\equiv parity asymmetry) of the **energy-momentum formation** (see **IX.8.**)

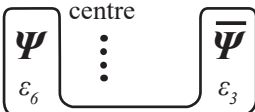
X.6.



that was originally created by the Big Bang repulsion act, as described in **VIII.10.**, and thus unavoidably “imprinted” onto the post-Big Bang part of the Universe by the Big Bang, is carried forwards by the decomposition process

X.7.



into the inner structure of the weak force $Z \equiv$  and therefore is preserved throughout the structures **atom \rightarrow molecule \rightarrow macromolecule \rightarrow **,

e.g. recognizable in the “left-handnesses” of the protein molecules of living beings – and only living beings.

The physical properties of these force matter particles, e.g. (p^+) , (e^-) , (ν) , (St) , (γ) , (Z) , (G) and others – described as “Normal Matter” as opposed to “Dark Matter” – predicted by various theories (e.g. the standard model, string theory, etc.) are being experimentally tested in massive accelerators (e.g. Cern). In future, these experiments will also be expanded to search for “Dark Matter”, at which point it would be helpful to have an a priori theory of the structural composition and the physical properties of these “Dark Matter” particles (see Chapter **XI**).

As part of the theoretical approach we are developing here: www.norbert-winter.com/elementarteilchentheorie.html

- „The Unified Construction Process of the Universe (the Big Bang Cascade) and the Development Process of the Universe from the Big Bang until Today (Annihilation and Creation)”, 04/08/2016
- “The Development Process of the Universe from the Big Bang until Today”, 04/08/2016
- “The Act of Creation of the Universe”, 17/12/2015
- GDE, “The Law of Greatest Simplicity”, 26/05/2014
- “The Highly Massive Scalar Strong Boson”, 19/04/2013
- MLE, “Matter, Logic, and Existence”, 06/03/2012
- “The Construction of Matter”, 14/04/2011

these works show how, starting at the **(beginning)** of the **(creation of the Universe)** via the Big Bang until now, the following matter and force structure arose in the Normal Matter part of the Universe:

proton: (p^+) \equiv $\underbrace{\Psi \Psi \bar{\Psi}}_{(-\xi, -Q, -\varepsilon_8, (\pm \varepsilon_9))}$ \equiv **3 basis spinor** - **4-split** object

electron: (e^-) \equiv $\underbrace{\bar{\Psi} \Psi \Psi}_{(+\eta, +\varepsilon_4, (\pm \varepsilon_5))}$ \equiv **3 basis spinor** - **3-split** object

neutrino: (ν) \equiv $\underbrace{\Psi \bar{\Psi} \Psi}_{(\pm \varepsilon_1)}$ \equiv **3 basis spinor** - **1-split** object

strong interaction: (St) \equiv $\underbrace{\Psi \Psi}_{(-\lambda, (\pm \varepsilon_2))}$ \equiv **2 basis spinor** - **2-split** object

electromagnetic-weak interaction: $(\underbrace{\gamma \ Z}_{*1})$ \equiv $\underbrace{\bar{\Psi} \Psi \ \underbrace{\Psi \ \bar{\Psi}}_{(-\varepsilon_3, (\pm \varepsilon_6))}}_{*1)}$, *1) by the decomposition of energy-momentum

where the components are connected together with „ \cup “, but nonetheless exists separately as individual physical objects (see **VII.23.** to **VII.33.**)

(Z) \equiv $\underbrace{\Psi \ \dots \ \bar{\Psi}}_{(+\varepsilon_6, -\varepsilon_3)}$ \equiv **2 basis spinor** - **2-split** object

(γ) \equiv $\underbrace{\bar{\Psi} \Psi}_{(0)}$ \equiv **2 basis spinor** - **0-split** object

gravitonic interaction: (G) \equiv $\underbrace{\underbrace{\Psi \bar{\Psi}}_{\underbrace{\Psi \bar{\Psi}}_{(-\varepsilon_7)}}}_{\underbrace{\Psi \bar{\Psi}}_{\underbrace{\Psi \bar{\Psi}}_{(-\varepsilon_7)}}}$ \equiv **4 basis spinor** - **1-split** object

X.8.

$\hat{=}$

VII.70.

(GDE)

The full details of how this connection between particles and forces is constructed, e.g. due to the effects of each the 3 factors **VII.5.**,

namely, the properties of the elementary fermions:

(p^+) \equiv proton, (e^-) \equiv electron, (ν) \equiv neutrino

with respect to mass, charge, type of interaction, magnitude of interaction, etc.,

as well as the properties of the elementary bosons:

(St) \equiv strong interaction, (γ) \equiv electromagnetic, (Z) \equiv weak interaction,
 (G) \equiv gravitational interaction,

are exhaustively summarized in **GDE, VII.1 to VII.80.** in 40 pages.

If we summarize **X.8.**, i.e. everything that formed as a **single system** in the form of an elementary particle set initiated by the Big Bang – including quantitatively – as follows:

$$\Psi_{\text{U}}^{(19)} \equiv \begin{array}{l} \text{1 proton } (p^+), \text{ 1 electron } (e^-), \text{ 1 neutrino } (\nu); \\ \text{1 strong interaction boson } (St), \text{ 1 electromagnetic boson } (\gamma), \text{ 1 weak boson } (Z), \\ \text{1 gravitational boson } (G), \end{array}$$

then we see that $\Psi_{\text{U}}^{(19)}$ viewed as an organizational entity

i.e. one **elementary particle set viewed as a single organizational entity**, is precisely that which is known as a

$$\text{X.9.} \quad \text{hydrogen atom} \equiv \text{H}$$

whose predominant role in the composition of matter is well-understood.

Furthermore, MLE chapters XII. and XIII. already give a rough outline of how this development sequence continues in the lower-energy atomic → molecular → macromolecular regions

X.10.

The cited reference also explains why the skew symmetry (parity-asymmetry) of the energy-momentum formation (see IX.1., IX.2.) originating from the Big Bang might possibly be ultimately responsible for the parity asymmetry ≡ „left-handedness” of the protein molecules of living organisms.

This is motivated by the following observation:

**ALL PROTEIN MOLECULES PRODUCED BY LIVING ORGANISMS
ARE LEFT-HANDED**

In the present paper UC-3 it has been shown how the Big Bang process, i.e. the rupture of ${}_5\overline{G}$, affects a single elementary particle set, and how this leads to the creation of the hydrogen atom of normal matter ($p^+, e^-, \nu; St, \gamma, Z, G$). I.e, the so-called “Normal Matter“ is the part of matter that has passed through the Big Bang process (rupture of ${}_5\overline{G}$).

Based on this, the following paper UC-4 will show how the so-called most-colossal Big Bang reproduction cascade was triggered by the rupture process of a single ${}_5\overline{G}$ (single Big Bang process) 13.8 billion years ago resulting in the creation of the earliest universe with all its matter and force manifestations ($\frac{2}{3}$ Dark Matter, $\frac{1}{3}$ Normal Matter / Antimatter).