# Chapter 8 The Space-Distortion-Vector

**Introduction to the space-distortion-vector :**

The space-distortion-vector is intended to enable the observer to generate his own space-time deformation, which can then be used technically, for example, to overcome large distances without being subject to the space-time mechanical effects according to Lorentz.

From the previous chapters, we know that the field radius $R$ with the sine curve $r(t) = R \sin(\alpha)$ of an object describes the contraction of a space segment. The result for a spatially distorted distance is expected to follow the mechanism of the field radius $r(t)$. In this case, we assume an object as the source of gravity, which generates a gravitational field with an event horizon of $R_{BH} = 25$ m. The observer takes up a position within the object.

To simulate this, fions are calculated from a proton mass that, with the help of a multiple of a particle-exchange fion-particle-coupling, convey a mass $M_{BHX}$ via their matter pulse and generate a field radius $R_{fionX}$. The gravitational potential $dM(\alpha)$ is now assumed to originate from the immediate field source, and that of the universe is neglected.

The **space-distortion-vector** $\boldsymbol{\overrightarrow{\Delta r_{SDV}(t)}}$ is aligned as a spherical sector depending on the gravitational potential for $dM(\alpha)$ and is expressed mathematically by a simple differential geometry.

$$\boxed{\overrightarrow{\Delta r_{SDV}(t)} = (R_{fionX} - R_{BH}) \sin(kt)} \qquad (8.01)$$

The term $\sin(kt)$ describes the relativistic effect along its spherical sector with the field angle $\alpha = kt$, which is noticeable through the inertial motion in space-time.

The coupling frequency of protons from the 10th dimensional family is combined with its electromagnetic field, ultimately generating a gravitational field characteristic of protons. The field is then mirrored between two field-space levels. External fields that could interfere with the particle-field are bypassed by this gravitational field. The mass of the object is registered as massless for an external observer in the particle-field. With the help of such a field, an object cannot interact or collide with another object at high speeds.

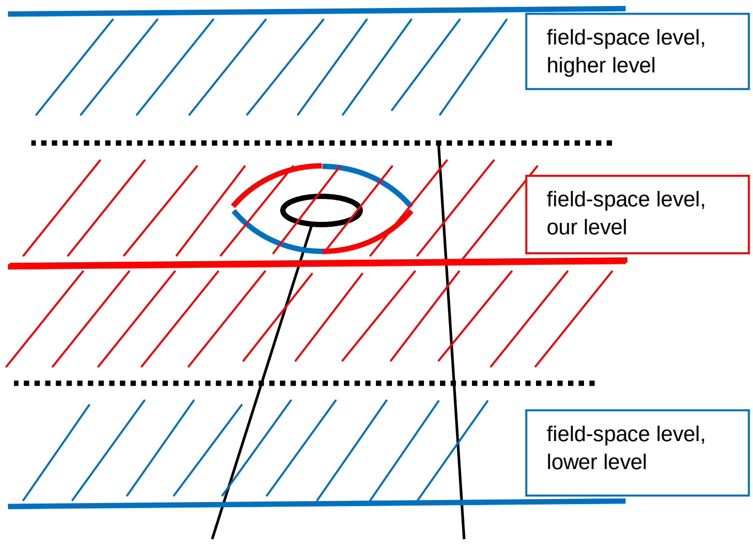


**Figure 8.1: The object is located between two field-space levels, reflected between them**

How far could a space-dependent, self-emitted gravitational field be distorted? A more detailed description of this technical sketch will be left open for now. The field passes through an area with vertical and horizontal exit zones. A horizontal field vector encounters a vertical field vector of the gravitational field. Hypothetically, this would cause the field emitted horizontally at the vertical event horizon with its multiple of the maximum field propagation speed $V_5 = c$ to be deflected or accelerated to an equivalent of $c^2$ at the vertical event horizon with its multiple of the maximum speed $V_{max} = c$. Viewed across space-time, the field propagates at the maximum speed $V_{max} = c$, but travels a distance that light would have travelled in a square without space distortion. A space distortion forms towards the gravitational source. **Figure 8.2** illustrates this process.

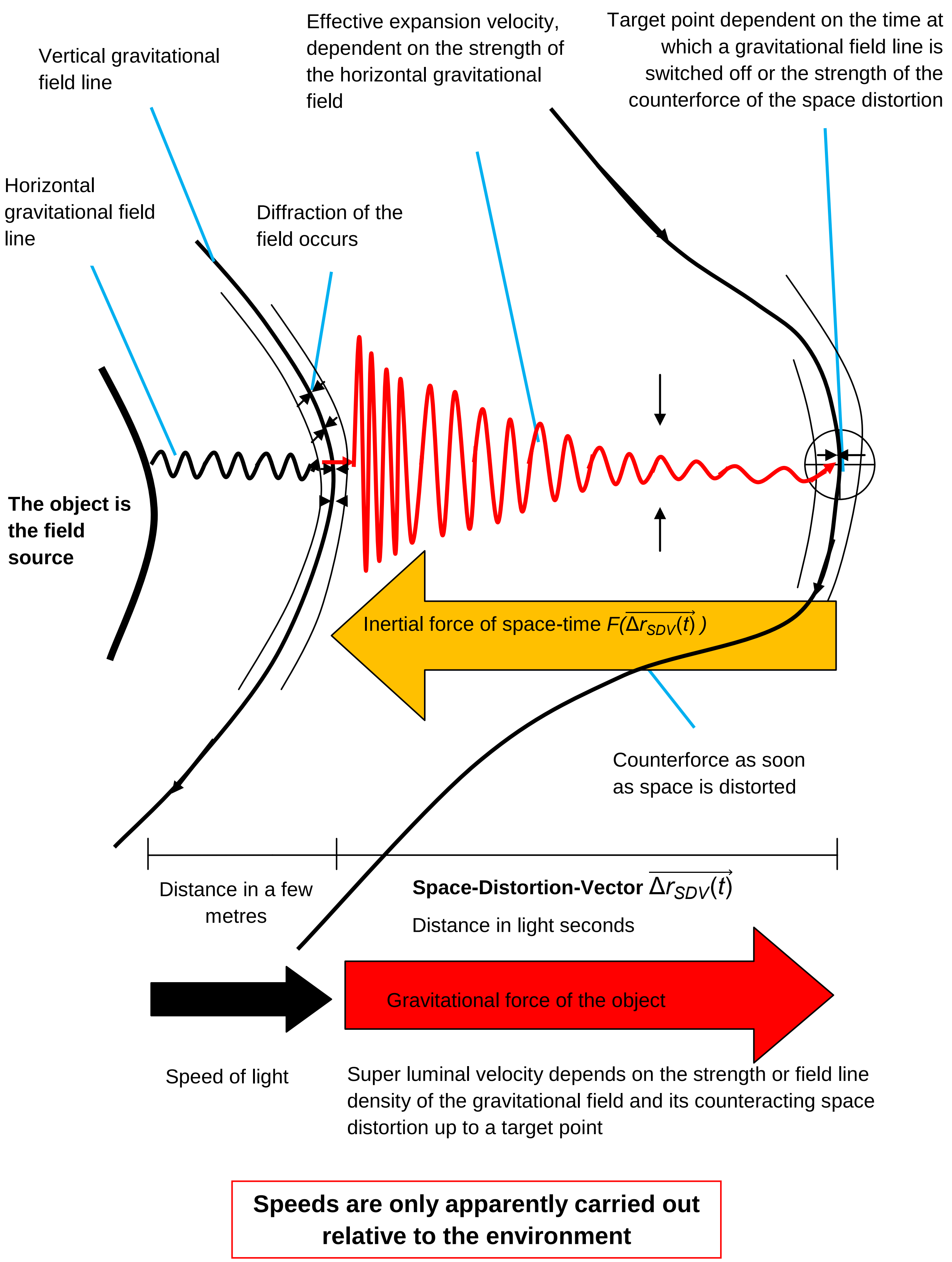


**Figure 8.2: Space-distortion-vector to the target point**

**Figure 8.3** shows the increase in the effect of the inertial force of space distortion (space distortion force) against the resulting gravitational field for an example of a double maximum velocity $V_{max}$ with $2c$. The amplitude decreases with the expansion, so that a space distortion can only be as large as the resulting gravitational force of the field.

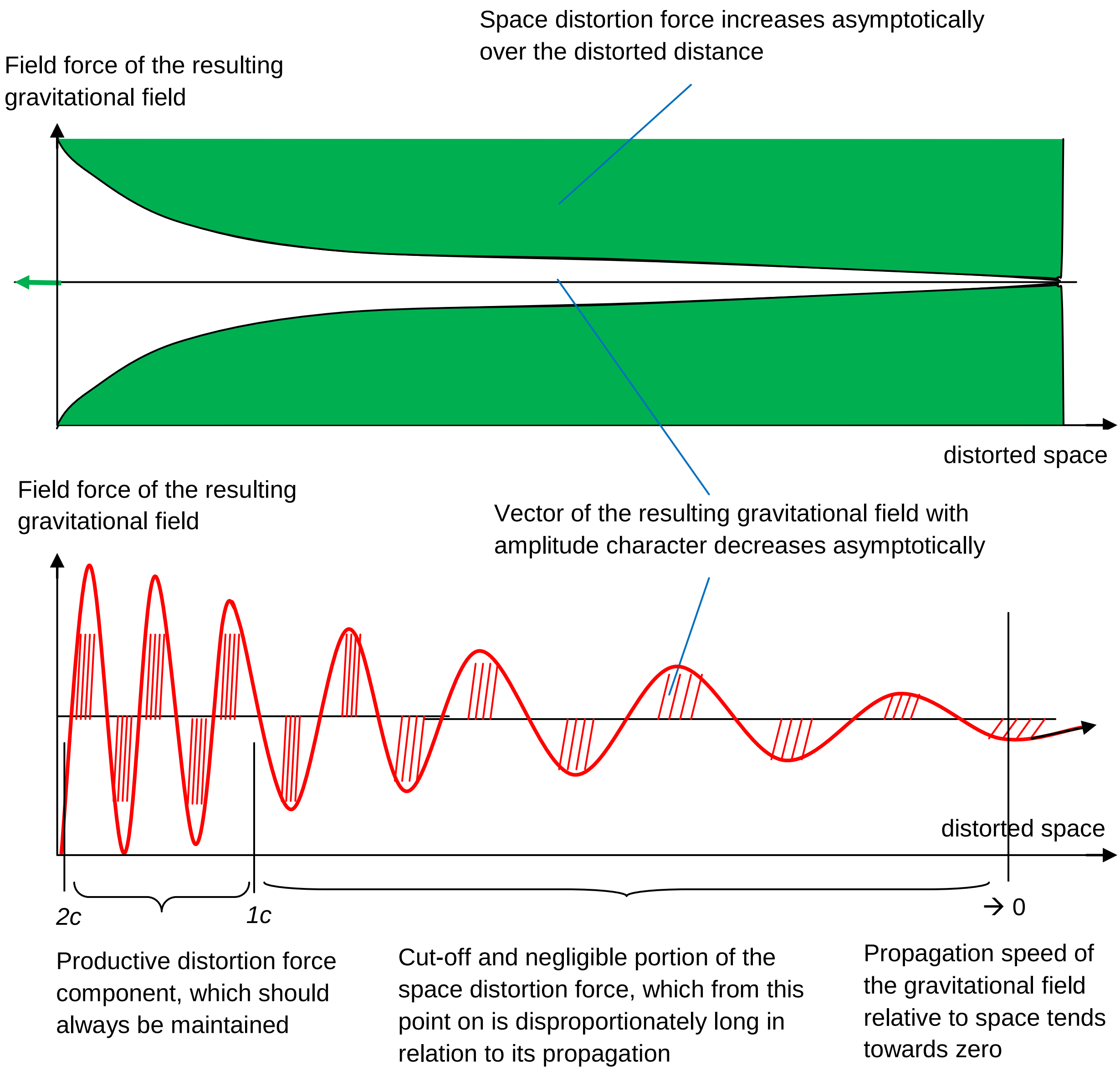


**Figure 8.3: Schematic behaviour of the space distortion force against the resulting gravitational field**

**Calculation of the maximum space-distortion-vector:**

A horizontally emitted field encounters a vertical field that has black hole properties, with a specific event horizon and field radius of $R_{BHX}$.

The following approach applies to the space-distortion-vector if there is exact horizontal contact with the gravitational field:

$\overrightarrow{\Delta r_{SDV}(t)} = (R_{fionX} - R_{BH}) \sin(\alpha)$ with: $\sin(\alpha) = 1$ – maximum

$\Delta r_{SDV}(t) = R_{fionX} - R_{BH}$

The mathematical relationship for the field radius $R_{BH}$ and $R_{fionX}$ is based on the assumption that the force corresponds to the sinusoidal periodicity of the force of a photon:

$F_{BH} = F_{pho}$ with: $F_{pho} = m\, R\, k^2 \sin(\alpha)$ ; $F_{BH} = \frac{G\, M_{BHX}\, m}{r(t)^2} \sin(\alpha)$

$\cancel{m}\, R_{pho}\, k^2_{pho}\, \cancel{\sin(\alpha)} = \frac{G\, M_{BHX}\, \cancel{m}}{r(t)^2}\, \cancel{\sin(\alpha)}$ with: $r(t)$ at location $\sin(\alpha = 90°)$ to $R_{BHX}$

$G = 6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2}$ ; $c = 299792458\ \frac{\mathrm{m}}{\mathrm{s}}$ ; $h = 6{,}626\ 10^{-34}$ Js ; $R_{BHX} = 25$ m

The following formulas describe the field radius $R_{BH}$ of the event horizon of a gravitational source in general, if it consists of a fictitious fionX:

(8.02)

$$\boxed{R_{BH} = \sqrt{\frac{G\, M_{BH}}{R_{fionX}}\, \frac{1}{k_{fionX}}} = \sqrt{\frac{G\, M_{BH}}{c\, k_{fionX}}} = \sqrt{\frac{M_{BH} R_{fionX}^2}{M_{fionX}}} = \sqrt{\frac{G^2\, M_{BH}\, M_{fionX}}{c^4}}}$$

The fictitious mass $M_{BHX}$ describes the mass required for a gravitational field to generate an artificial event horizon for the maximum velocity $V_{max}$ with the field radius $R_{BHX} = 25$ m.

$$R_{BHX} = \frac{G\, M_{BHX}}{c^2} \rightarrow M_{BHX} = \frac{R_{BHX}\, c^2}{G} \qquad (8.03)$$

$\rightarrow \frac{c^2}{G}$ Indicator for the maximum amount of the space-distortion-vector

$$M_{BHX} = \frac{R_{BHX}\, c^2}{G} = 3{,}3686\ 10^{28}\ \mathrm{kg}$$

$$k_{fionX} = \frac{G\, M_{BHX}}{R_{BHX}^2\, c} \tag{8.04}$$

$$k_{fionX} = \frac{6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2} \cdot 3{,}3686\ 10^{28}\ \mathrm{kg}}{(25\ \mathrm{m})^2 \cdot 299792458\ \frac{\mathrm{m}}{\mathrm{s}}} = 1{,}2\ 10^{7}\,\frac{1}{\mathrm{s}}$$

$$R_{fionX} = \frac{G\, M_{BHX}}{R_{BHX}^2\ \ k_{fionX}^2} \tag{8.05}$$

$$R_{fionX} = \frac{6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2} \cdot\ \ 3{,}3686\ 10^{28}\ \mathrm{kg}}{(25\ \mathrm{m})^2 \cdot\ \ (1{,}2\ 10^{7}\ \frac{1}{\mathrm{s}})^2} = 25\ \mathrm{m}$$

$\boldsymbol{R_{fionX} = R_{BH}}$

$\boldsymbol{\Delta r_{SDV}\,(t) = R_{FionX} - R_{BH}} = 0$ → Range of possible spatial distortion

The range of spatial distortion $\Delta r_{SDV}(t)$ depends on the amount $\frac{c^2}{G}$ of its fictitious mass $M_{BHX}$. The larger the amount of the space-distortion-vector, the smaller the distance it can distort. In this case, the space-distorted area with $R_{fionX} = R_{BH}$ would be infinitely small, since the field propagation velocity $V_5$ would be infinitely small. The space-distortion-vector must lie in the range < $\frac{c^2}{G}$ for a change in space to occur at all.

**<u>Calculation of a space-distortion-vector propagating at 2*c*:</u>**

Now we need to find a solution in which a space distortion propagates only at twice the maximum speed $V_{max} = 2c$. Mechanically, the inertial motion of an object in the electromagnetic photon field is shifted to such an extent that the braking effect is no longer limited to the maximum speed $V_{max} = c$, but is at $V_{max} = 2c$. An object emitting a gravitational field could thus travel a distance with its field relative to a space distortion that would be equivalent to twice the maximum speed $V_{max} = 2c$.

**State of field deformation:**

The effect of the space-distortion-vector runs parallel to the field deformation, which is modelled by the field propagation velocity $V_5$.

$$R_{BHY} = 25\ \mathrm{m};\ M_{BHY} = \frac{R_{BHY}\, c^2}{G} \rightarrow y^2 = 2c \rightarrow V_5 = y = \sqrt{2c} = 24486{,}4\ \frac{\mathrm{m}}{\mathrm{s}}$$

→ $y$ corresponds to the speed that a stationary particle reaches due to the gravitational force up to the field radius $R_{BHY}$.

**Virtual mass of the fion for the event horizon:**

$$M_{BHY} = M_{fionY} = \frac{R_{BHY}\, y^2}{G} \qquad (8.06)$$

$M_{fionY}$ = 2,248 $10^{20}$ kg

<u>Alternatively:</u> $M_{fionY} = \dfrac{R_{BHY}\, c^2}{G} \sin^2(\alpha)$ (8.07)

$$\text{with: } \sin^2(\alpha) = \left( \frac{24486{,}4\ \frac{m}{s}}{299792458\ \frac{m}{s}} \right)^2$$

The mass $M_{fionY}$ describes the mass required to generate an artificial event horizon for the field propagation velocity $y$ = 24486,4 $\frac{m}{s}$ with a field radius of $R_{BHY}$ = 25 m.

**Circular frequency *k* of fionY:**

$$k_{fionY} = \frac{G\, M_{BHY}}{R_{BHY}^2\, c} \qquad (8.08)$$

$$k_{fionY} = \frac{6{,}67\ 10^{-11}\ N\frac{m^2}{kg^2} \cdot 2{,}248\ 10^{20}\ kg}{(25\ m)^2 \cdot 299792458\ \frac{m}{s}} = 0{,}08\ \frac{1}{s}$$

With the step of artificially lowering the maximum speed $V_{max}$ from $c$ to the value $y$, its circular frequency $k$ has changed. Thus, the constant $k_{Uni}\, M_{Uni}$ = 4,0396 $10^{35}$ $\frac{kg}{s}$ no longer applies, but only:

$$k_{fionY}\, M_{fionY} = 1{,}8\ 10^{19} \frac{kg}{s}$$

**Range of possible spatial distortion:**

$$R_{fionY} = \frac{G\, M_{BHY}}{R_{BHY}^2\ k_{fionY}^2} \qquad (8.09)$$

$$R_{fionY} = \frac{6{,}67\ 10^{-11}\ N\frac{m^2}{kg^2} \cdot 2{,}248\ 10^{20}\ kg}{(25\ m)^2 \cdot (0{,}08\ \frac{1}{s})^2} = 3{,}75\ 10^9\ m$$

→ $\boldsymbol{R_{BHY} \neq R_{fionY}}$

**$\Delta r_{SDV}(t) = R_{fionX} - R_{BH}$ = 3,75 $10^9$ m** → Range of possible space distortion

**Wavelength of FionY:**

$$\lambda_{fionY} = \frac{h\ y^2}{G\ M_{fionY}^2\ k_{fionY}} \tag{8.10}$$

$$\lambda_{fionY} = \frac{6{,}626\ 10^{-34}\ \text{Js} \cdot (24486{,}4\ \frac{\text{m}}{\text{s}})^2}{6{,}67\ 10^{-11}\ \text{N}\frac{\text{m}^2}{\text{kg}^2} \cdot (2{,}248\ 10^{20}\frac{\text{kg}}{\text{s}})^2 \cdot 0{,}08\ \frac{1}{\text{s}}}$$

$$\lambda_{fionY} = 1{,}4733\ 10^{-54}\ \text{m}$$

In comparison, the wavelength of a black hole with mass $M_{BH} = 10^{31}$ kg:

$$\lambda_{BH} = 2{,}21\ 10^{-73}\ \text{m}$$

**Reaction mass required to produce these properties:**

The fionY under consideration is fictitious and cannot be produced individually. Technically, a reaction mass could be used that produces these properties and distributes them across several particles. Let us assume that a reaction mass of $m_{obj} = 500$ kg is available, consisting of protons, which is technically used to increase the matter pulse accordingly. Now the energy is distributed from the individual fionY to $n$ protonsY. The multiple of the coupling frequency of the proton is then distributed over the reaction mass.

For the use of a proton mass with $m_{obj} = 500$ kg:

$m_{proton} = 1{,}683\ 10^{-27}$ kg $\qquad n_{proton} = \frac{500\ \text{kg}}{1{,}681\ 10^{-27}\ \text{kg}} = 2{,}974\ 10^{29}$ $\qquad$ with: $n\ \varepsilon\ \mathrm{N}$

$$M_{protonY} = \frac{M_{fionY}}{n_{proton}} \tag{8.11}$$

$$M_{protonY} = \frac{2{,}248\ 10^{20}\ \text{kg}}{2{,}974\ 10^{29}} = 7{,}56\ 10^{-10}\ \text{kg}$$

Each proton from the $m_{obj} = 500$ kg reaction mass must mimic the mass of $M_{protonY} = 7{,}56\ 10^{-10}$ kg in order to develop a field radius of 25 m, which generates a velocity of 24486,4 $\frac{\text{m}}{\text{s}}$ for the object at this location.

**Field radius *R* of protonY:**

$$R_{BH\_protonY} = \frac{G\, M_{protonY}}{y^2} \quad (8.12)$$

$$R_{BH\_protonY} = \frac{6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2} \cdot 7{,}56\ 10^{-10}\ \mathrm{kg}}{(24486{,}4\ \frac{\mathrm{m}}{\mathrm{s}})^2} = 8{,}41\ 10^{-29}\ \mathrm{m}$$

Alternatively: $R_{BH\_protonY} = \frac{R_{BHY}}{n_{proton}}$ (8.13)

**Circular frequency *k* of the protonY:**

$$k_{protonY} = \frac{G\, M_{protonY}}{R_{BH\_protonY}^2\, c} \quad (8.14)$$

$$k_{protonY} = \frac{6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2} \cdot 7{,}56\ 10^{-10}\ \mathrm{kg}}{\left(8{,}41\ 10^{-29}\ \mathrm{m}\right)^2 \cdot 299792458\ \frac{\mathrm{m}}{\mathrm{s}}} = 2{,}38\ 10^{28}\ \frac{1}{\mathrm{s}}$$

Alternatively: $k_{protonY} = k_{fionY}\ n_{proton}$ (8.15)

**Field radius of the possible space distortion per protonY:**

$$R_{protonY} = \frac{G\, M_{protonY}}{R_{BH\_protonY}^2\ k_{protonY}^2} \quad (8.16)$$

$$R_{protonY} = \frac{6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2} \cdot 7{,}56\ 10^{-10}\ \mathrm{kg}}{\left(8{,}41\ 10^{-29}\ \mathrm{m}\right)^2 \cdot (2{,}38\ 10^{28}\ \frac{1}{\mathrm{s}})^2} = 1{,}26\ 10^{-20}\ \mathrm{m}$$

Alternatively: $R_{protonY} = \frac{R_{fionY}}{n_{proton}}$ (8.17)

**Wavelength of protonY:**

$$\lambda_{protonY} = \frac{h\, y^2}{G\, M_{protonY}^2\, k_{protonY}} \quad (8.18)$$

$$\lambda_{protonY} = \frac{6{,}626\ 10^{-34}\ \mathrm{Js} \cdot (24486{,}4\ \frac{\mathrm{m}}{\mathrm{s}})^2}{6{,}67\ 10^{-11}\ \mathrm{N}\frac{\mathrm{m}^2}{\mathrm{kg}^2} \cdot (7{,}56\ 10^{-10}\ \mathrm{kg})^2 \cdot\ 2{,}38\ 10^{28}\ \frac{1}{\mathrm{s}}} = 4{,}379\ 10^{-25}\ \mathrm{m}$$

Alternatively: $\lambda_{protonY} = \lambda_{fionY}\ n_{proton}$ (8.19)

**The wavelength of the stationary proton must be reduced to that of a protonY:**

$\lambda_{proton}$ = 1,315 $10^{-15}$ m → $\lambda_{protonY}$ = 4,379 $10^{-25}$ m

**The frequency of the proton at rest must be increased to that of the protonY:**

$$f_{proton} = \frac{c}{\lambda_{proton}} = 2{,}28\ 10^{23}\ \text{Hz} \rightarrow f_{protonY} = \frac{c}{\lambda_{protonY}} = 6{,}846455\ 10^{32}\ \text{Hz} \qquad (8.20)$$

➔ Frequency increase required for a 2*c* strong space distortion.

**Energy content of the reaction mass at rest:**

$$E = m\,c^2 = 500\ \text{kg} \cdot (299792458\ \tfrac{\text{m}}{\text{s}})^2 = 4{,}49\ 10^{19}\ \text{J}$$

**Required energy irradiation with the coupling frequency specified above:**

$$E_{protonY} = h\,f_{protonY} \qquad (8.21)$$

$E_{protonY}$ = 6,626 $10^{-34}$ Js · 6,846455 $10^{32}$ Hz = 0,45365 J → per proton

$$E_{proton\_massY} = n_{proton}\,h\,f_{protonY} \qquad (8.22)$$

$E_{proton\_massY}$ = 2,974 $10^{29}$ · 6,626 $10^{-34}$ Js · 6,846455 $10^{32}$ Hz = 1,35 $10^{29}$ J

➔ By means of irradiation of approx. 1,35 $10^{29}$ J and a frequency of approx. 6,85 $10^{32}$ Hz on the proton mass, a gravitational field is generated with a space distortion for acceleration to the target velocity of 2*c* and a field propagation velocity of 24486,4 $\frac{\text{m}}{\text{s}}$.

**Fulfilment of a field-space shift for the 10th dimensional family:**

In order for the object to be pulled out of the phase of the particle-field, it requires a minimum frequency to exist between two field-space levels. This prevents any objects or external fields of the particle-field from acting on the object. The state of displacement exactly between two field-space levels requires at least the following frequency for the proton:

$$f_{proton,10.} = \frac{1}{2}\left[\frac{4}{3}\left(\frac{3}{2}\right)^3\right]^{10} \frac{5}{10}\,\frac{6}{3}\,f_e \qquad (8.23)$$

$f_{proton,10.}$ = 1702531,44 · 1,2356 $10^{20}$ Hz = 2,1 $10^{26}$ Hz

With $f_{protonY}$ ≈ 6,85 $10^{32}$ Hz > $f_{proton,10.}$ ≈ 2,1 $10^{26}$ Hz, the intermediate reflected state would already be fulfilled.

**Scaling to a multiple of its frequency and energy:**

It is known from communications technology that a multiple of $\frac{\lambda}{2}$ corresponds to the characteristic of the comprehensive wavelength. Similar to the previous chapters, the results are scaled by a factor of 2.

Proposal for scaling with: $2^{81}$

$$f_{protonY,scaled} = \frac{f_{protonY}}{2^{81}} \tag{8.24}$$

$$\underline{\underline{f_{protonY,scaled}}} = \frac{6{,}85\ 10^{32}\ \mathrm{Hz}}{2^{81}} = \underline{\underline{283{,}31\ \mathrm{GHz}}}$$

(excitation frequency of the proton to be set)

$$E_{protonY,scaled} = \frac{E_{proton\_masseY}}{2^{80}} \tag{8.25}$$

$$E_{protonY,scaled} = \frac{1{,}35\ 10^{29}\ \mathrm{J}}{2^{81}} = 55{,}8\ \mathrm{kJ}$$

$$P_{input,scaled} = \frac{E_{protonY_{scaled}}}{t} \tag{8.26}$$

$$\underline{\underline{P_{input,scaled}}} = \frac{53{,}8\ \mathrm{kJ}}{\mathrm{s}} = \underline{\underline{53{,}8\ \mathrm{kW}}}$$

(irradiation power for the 500 kg proton plasma)

The duration of the irradiation must be determined.

The susceptibility to interference and the necessary fine-tuning of the coupling frequency have increased accordingly. Fine-tuning the field will be a technical challenge.

**Relaxation of space distortion:**

After the horizontally emitted field is switched off, the space distortion immediately seeks the fastest path to relaxation. Since the last emitted field line is already aligned with the maximum space distortion potential of up to $< \frac{c^2}{G}$, the space distortion can only begin to relax where the field is no longer emitted. Thus, the only way for the space distortion to relax is to move the field source itself by means of its own space distortion force. A compensatory movement towards the target point of the space-distortion-vector takes place. The object follows its last emitted field until the target point is reached. During this time, the object rests within the field relative to the field it emits itself, because it is the field source itself. The object within the field therefore does not move relative to its own field source and, due to its missing velocity vector $V_3 = 0$, does not experience any time or length contraction effects. All space-time mechanical effects are bypassed as long as the object is pulled along its own gravitational field to the target point of the space distortion.

This model could give rise to new forms of propulsion that make long distances economically accessible. It requires the exact coupling frequency with the corresponding power. This can be calculated using the FSM.