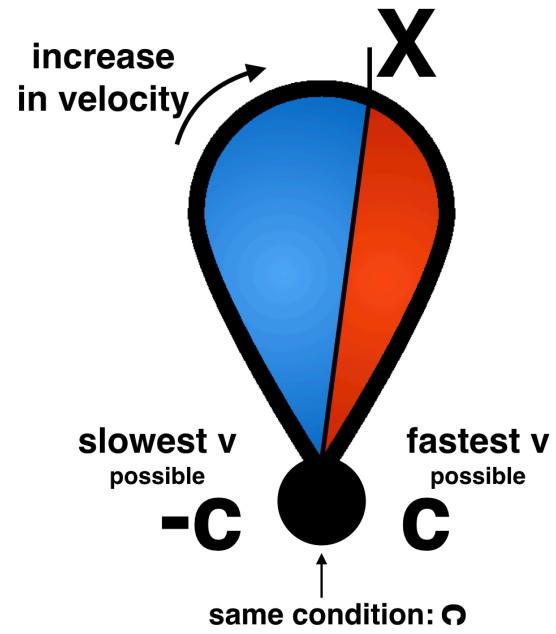
Jean-Marc Hoffmann, 18.09.2017
Email: j-m.hoffmann@hotmail.de, Luxemburg

Concept about space-time, black holes and the speed of light

The condition inside of black holes and at the speed of light are connected:



-c: speed at the center of a black hole

c: speed of light

v: velocity

X: individual speed within space-time
-c < X < c

space-time / universe

space-time is enlarged

space-time is contracted

in : space-time does not exist, matter does not exist, only energy/radiation

Two possibilities to define energy (E):
derived from Einstein's theory of relativity

$E=m\times(-c)^2$ ← → $E=m\times c^2$

black hole **light speed**

m: mass of an object in space-time

At the center of a black hole, time stops. Matter is decelerated and at the slowest velocity possible -c, i.e. the opposite of the speed of light which represents the fastest velocity possible, space-time ceases to exist. At this resting state, matter is only made up of free energy (photons). This condition is equal to the state reached at the speed of light. As soon as matter has reached the fastest velocity possible, i.e. the speed of light, it is only present as photons. Here as well, space-time doesn't exist and for both states no change of the environment can be detected anymore. This means within a black hole, matter becomes pure energy/radiation. Energy can only be released in form of Hawking radiation as also in this state at the speed of light no space-time exists for the released energy.

Space-time is variable as the difference between –c and c stays equal, but objects within space-time move with different velocities. As a consequence, the uptake of information/velocities through the moving body changes with its speed and space-time gets distorted or to be precise starts to exist.

Jean-Marc Hoffmann, 18.09.2017
Email: j-m.hoffmann@hotmail.de, Luxemburg

Negative velocities can be defined as information that cannot reach a moving body anymore and thus are not perceived at a specific speed.
Information that are behind a moving object within space-time are perceived later because the body moves forward and information coming from the opposite direction (in front) are perceived faster. Therefore, space-time located behind an object is enlarged and in front is contorted.

For an observer within space-time, an object seems to never reach the speed of light or the slowest velocity possible within the center of a black hole, as this “speed” is the transition of matter into energy, for which space-time ceases to exist.

Time can be defined as the perception of different velocities by an observer.