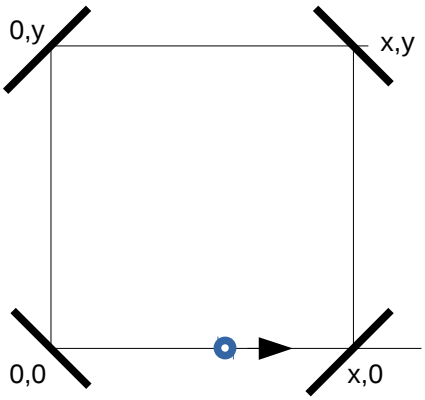
The holographic principle.

According to the holographic principle, the information of our three-dimensional universe plus time can be projected on a 2D-surface plus time or on a 3D-surface without time.
In other words; All information in our four-dimensional universe may be described in a space with three coordinates. See Wikipedia.

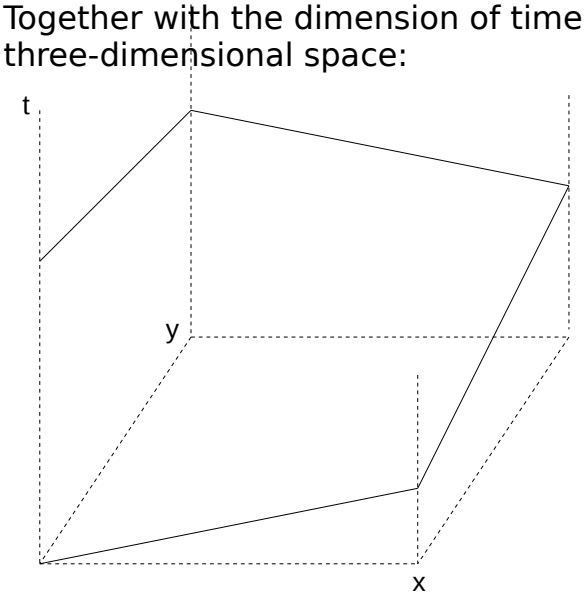
This seems extremely complicated but can, in a number of cases, simply be explained.

Take, as an example, a three-dimensional space which is defined by x, y and z. If it appears that z is a function of x and y then z is no longer necessary for the full description of that space. We say that the projection of this x-y-plane gives a full description of the space.

Take a plane with four mirrors. The four mirrors are arranged so that when we send a photon from the coordinates 0,0 in the direction of the first mirror at coordinate x, 0 it is reflected towards the second mirror on x, y which is then reflected again to 0, y then to 0.0 etc.



Together with the dimension of time, the movement can be imagined in a three-dimensional space:



In this case time is a function of x and y in such a way that $t=\frac{\sqrt{x^2+y^2}}{c}$.

The time dimension in the figure, does not add any extra information, and so we have enough information in the projection of the x, y, t-space in the x, y-plane.

As described in Theory of Relativity for dummies a particle of matter can be described as being composed of particles (neutrons, protons, and electrons) that are again composed of tiny particles moving (rotating) at the velocity of c. If we let such a particle move along the same path as the photon then $t=\frac{\sqrt{r_c^2+x^2+y^2}}{c}$.

r_c *is the displacement of the quarks, anti-quarks, gluons and the charge of the electron.*

Also in this case, time does not add any extra information. The projection of x, y, t-space in the x, y-plane is sufficient enough to describe all the information.

See: Relativity simply explained
and also: A Thin Sheet of Reality: The Universe as a Hologram
and "Why is the universe expanding?".