Clock rate

According to SR when a stationary observer sees a clock moving at a relative speed of v it will show a time of $t'=\gamma(t -vx/c^2)$. The values of time and distance in the observer's frame are t and x. The Lorentz factor gamma, γ, exceeds 1 if v is not zero.

This equation assumes that when the origins of the moving and stationary frames coincide, i.e. at $x= x'=0$ (x' is measured in the moving frame) then clocks at both origins are synchronized at $t'=t=0$. The clock moves in the direction of the positive x axis.

Suppose moving clocks in a line are synchronized in their own frame and they move past an observer at $x=0$ in a frame at rest. The above equation suggests that the clocks would run faster than the observer's clock because $t'=\gamma(t)$ and $\gamma>1$. This would of course be time contraction rather than the normal dilation.

To obtain a different interpretation another stationary observer and clock are needed at say -x. A moving clock opposite this stationary clock would show a time of $\gamma(vx/c^2)$ when $t=0$, i.e. it would be in the future. So time is supposedly warped along x.

For example imagine a particle is created at $t=0$ and travels at 99% of the speed of light, so γ is approximately 7, and it takes 1 second in the stationary frame to reach a distant detector at $x=0$. So the particle is created at $x = -0.99c$ (where the speed of light is measured in distance per second). The particle's age when it is created is $t=0$ in the stationary frame but in the moving frame it is $t'=\gamma(t -vx/c^2) = 7(0 – (0.99c(-0.99c)/c^2))$ i.e. nearly 7 seconds. (Its age at the detector then increases by $\Delta t'=1/\gamma$.)

So how is a particle created several seconds before its creation? If it had a half-life of 2 seconds it would be very unlikely to last to an age of 7 seconds in its own frame. Alternatively how can a clock be created reading 0 seconds also be created reading 7?

Imagine a line of synchronized clocks at rest on rockets that are then launched at the same time on identical paths in the same direction. Stationary observers alongside the paths must see identical times on the identical clocks not different times.