The Frame Inclusion Paradox and the Nature of Time

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The paradox that led Einstein to Minkowski's world lines, the block universe, and discarding the concept of now was ~~the easily observed guarantee that~~ this: every object exists simultaneously in every frame. [This stretches every object into a line that crosses each space hyperplane (foliation) created by each unique inertial frame. This slicing idea led Minkowski to the concept of world lines and Einstein to the block universe. Both ideas make the concept of a meaningful, singular "now" nearly impossible to define mathematically.] Call this [need for every frame to see and include all objects in the universe no matter how it "slices" space and time] the frame inclusion paradox.

Three-parameter Lorentz space, LxLyLz, resolves the frame inclusion paradox by having one universal "Lorentz frame" of self-existing objects. There is no time separation, only Lorentz area separation. [The Lx, Ly, and Lz span coordinates are meter-second Lorentz areas. For example, a frame-dependent 1-meter rest frame distance becomes a Lorentz-invariant 3.336 m·ns (meter-nanosecond) span. Notice that the squaring effect of using areas as separation metrics means a three-meter 3^2 or 9 times larger, 30.02 m·ns. Choosing lightspeed-calibrated lengths keeps numbers smaller, e.g., a five-lightyear (5 ly) span becomes 25 ly·yr (25 lightyear-years).]

~~Least-possible Lorenz diagonals then give the best analog to same-frame distance. The least-possible Lorentz diagonal is the diagonal for the R=1 square form of the area, with units of √(meter·second).~~

As with xyz distance, greater Lorentz space distance means greater uncertainty in the actual state of a distant entity.

~~Now,~~ Here is the main speculation~~, one~~ that needs more examination and specifics: Time emerges due to asymmetries in the probabilities that nearby Lorentz objects will change before the observer can reach them. "The past" is the direction in which nearby objects, including the observer, are most likely to undergo only cyclic changes that, for the most part, preserve object forms and states. [Or perhaps it's the opposite: The past changes the most. The critical point is that there is a profound difference in the dynamics of how this particular direction operates.] [But how can "the past" be an xyz direction when the xyz axes are isotropic in both directions? Easy: the *past* is multiscale and always the opposite of a cluster *velocity*. You can switch velocity signs and return the way you came in *space*, but never in *time*, which is gone. Thus, also, a motionless universe has no time.]

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