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Who then Measures the Relativistic Mass, M?

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In Special relativity (SR), for a stationary observer (usually on Earth), the mass of a moving object appears to be bigger than what he perceives.

Suppose now that an object of mass M_0 moves with a relativistic speed υ. According to SR, its mass will increase. A formula for this increase is

$$M = M_0/\sqrt{(1-\upsilon^2/c^2)}$$

where M is the relativistic mass of the object, L_0 is its stationary mass and c ($\approx 3 \times 10^8$ *m sec*$^{-1}$) is the speed of light.

However, M_0[1], can be measured by both an Earth observer and by an observer associated with the moving object, but both of them cannot measure M. Now the inevitable arises: who then measures the relativistic mass of the moving object, M, if both observers measure only its stationary mass, M_0?

So, we conclude that both a stationary and a moving observer cannot measure relativistic time dilation [1], length contraction [2] and relativistic mass.

Reference

[1] P. I. Premović, *Who then measures the relativistic time dilation, ΔT*? The General Science Journal.
[2] P. I. Premović, *Who then measures the relativistic contracted length, L*? The General Science Journal.

[1] In SR, subscript 0 usually denotes the stationary reference system.