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Two-Rockets Thought Experiment FLORENTIN SMARANDACHE, University of New Mexico — Let $n \geq 2$ be identical rockets: $R_1, R_2, \ldots, R_n$. Each of them moving at constant different velocities respectively $v_1, v_2, \ldots, v_n$ on parallel directions in the same sense. In each rocket there is a light clock, the observer on earth also has a light clock. All $n+1$ light clocks are identical and synchronized. The proper time $\Delta t'$ in each rocket is the same. Let's focus on two arbitrary rockets R_i and R_j from the previous n rockets. Let's suppose, without loss of generality, that their speeds verify $v_i < v_j$. (1) In the reference frame of the astronaut in R_i it is like rocket R_i is stationary and R_j moves with the speed $v_j - v_i$. Therefore the non-proper time interval as measured by the astronaut in R_i with respect to the event in R_j is dilated with the factor $D(v_j - v_i)$, i.e. $\Delta t_{i.j} = \Delta t' D(v_j - v_i)$, and rocket R_j is contracted with the factor $C(v_j - v_i)$, i.e. $L_j = L_j^{'} C(v_j - v_i)$.(2) But in the reference frame of the astronaut in R_j it is like rocket R_j is stationary and R_i moves with the speed $v_j - v_i$ in opposite direction. Therefore, similarly, the non-proper time interval as measured by the astronaut in R_j with respect to the event in R_i is dilated with the same factor $D(v_j - v_i)$, i.e. $\Delta t_{j.i} = \Delta t' D(v_j - v_i)$, and rocket R_i is contracted with the factor $C(v_j - v_i)$, i.e. $L_i = L_i^{'} C(v_j - v_i)$ .But it is a contradiction to have time dilations in both rockets. (3) Varying i, j in $\{1, 2, \ldots, n\}$ in this Thought Experiment we get again other multiple contradictions about time dilations. Similarly about length contractions, because we get for a rocket R_j, $n-2$ different length contraction factors: $C(v_j - v_1)$, $C(v_j - v_2)$, $\ldots$, $C(v_j - v_{j-1})$, $C(v_j - v_{j+1})$, $\ldots$, $C(v_j - v_n)$ simultaneously! Which is abnormal.

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