Artificial Symmetry of Non-Symmetric Properties and Processes in Quasi-Inertial Laboratories

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The work considers laboratories situated in small areas of the rotating and non-rotating rings located on the same circle. The diameter of the circle on which the rings are located is so large and the angular velocity ω is so small that at the linear speed of the sections of the rotating ring under consideration, the laboratory on this ring can be considered inertial. By the speed of the laboratory the we mean the speed ωR. Since ω is absolute, and not relative, the “pure” (that is, without the addition of translational velocity) linear velocity ωR has a definite value, and we cannot arbitrarily change it, jumping from one reference frame to another. We call the velocity ωR quasi-absolute. It is shown that the one-way speeds of light c_1 and c_2, measured on a rotating ring with the help of a single clock based on the result of a round trip, differ from the constant c. The speed c_1 in the direction of rotation of the ring is less than constant c and the speed c_2 in the opposite direction is more than constant c. The same speeds c_1 and c_2 would be obtained if they were measured using a pair of clocks synchronized by a signal from the center of the rotating ring. That is on a rotating ring, the clock, synchronized by a signal from the center of the circle, meets the requirement of Reichenbach’s synchronism and does not meet the Einstein’s synchronism requirement. On a non-rotating ring, the clock, synchronized in this way, meets the requirement of Einstein's synchronism. If the observers on the non-rotating ring section and the observers on the rotating ring section, while moving next to each other using sets of their own clocks synchronized with the above method, measure the lengths of meter rulers and the speed of a single clock on the rings, then they will find the following. Observers in the section of the non-rotating ring will find a decrease in the length of the ruler and a slowdown in the pace of a single clock located on the rotating ring. On the other hand, observers on a rotating ring will find an increase in the length of the ruler and an acceleration of the pace of a single clock located on a non-rotating ring. In this case, the logical condition “if A<B, then B>A” will not be violated. True, the equations of electrodynamics will be different. In pursuit of the invariance of the equations of electrodynamics, you can artificially synchronize the clock on a rotating ring in Einstein's way, considering the sections of the ring at rest, and in fact, considering the absolutely rotating ring to be non-rotating. After all, the Einstein clock synchronization is carried out under the assumption of rest of its own frame of reference. It is impossible to synchronize the clock on the whole rotating ring in Einstein's style, but on the section of the rotating ring it is possible. After such synchronization, the equations in the laboratories on the rotating and non-rotating ring become invariant, but the logical absurdity of symmetry of physical quantities arises, consisting in the logical absurdity: “If A<B, then B <A”. Physically, this logical absurdity is expressed by the fact that observers in the section of the non-rotating ring will find a decrease in the length of the ruler and a slowdown in the pace of a single clock located on the rotating ring while observers on a rotating ring will also find a decrease in the length of the ruler and a slowdown in the pace of a single clock located on a non-rotating ring.