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## A Note on a Nonstandard Interpretation of the Special Theory of Relativity

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In our recent paper [1] we have shown in detail that the Ehrenfest paradox is not a paradox of the Special Theory of Relativity (STR). We also analysed the logical status of the widely spread statement that “moving clocks go slow”. We underlined that very often these problems are treated very dogmatically. On the example of Tyapkin’s works [2, 3] we describe the regrettable influence of dogmatic approach in the interpretation of the STR on the critical thinking and approach.

**Key words and phrases:** Ehrenfest paradox, special theory of relativity, clock paradox.

In modern literature and especially in various textbooks, very often the special theory of relativity is treated very formally and without any critical analysis but almost as a quasireligious credo.

To our best knowledge the only exception from such a regrettable tradition in the contemporary mainstream physical literature is the remarkable paper of A. A. Tyapkin [2]. In his paper, among many other results and elucidations, a deep analysis of the work of Henry Poincaré is provided and his ideas further developed resulting in the well founded conclusion that the concept of simultaneity of spatially separated events is completely of the conventional character. His conclusion, namely that “we cannot assert that processes proceed more rapidly in some inertial system than the corresponding process in another system” [2, p. 220] was an encouragement for us in our investigations and a point of departure of our analysis.

In the whole context of our analysis of logical errors in interpretations of the STR and their various sometimes unexpected and astonishing roots [1], it is important to mention here shortly the history of acceptance of Tyapkin’s paper for publication which was very unusual and with almost insurmountable obstacles [3]. Namely, contrary to the just quoted Tyapkin’s general conclusion, in the very waste literature about STR one can almost exclusively find for example the statements that the clocks in movement go slower than when stationary, what is in direct contradiction both with Tyapkin’s and our results. So, in the well known course of theoretical physics by Landau and Lifshitz [4], one can find in the second book, repeated from edition to edition, that *moving clocks go more slowly than those at rest*. In a recent book [5] we can read that *moving clocks really do go slow*. This tradition goes back at least to Einstein, who, for example in *The Meaning of Relativity* [6], formulated the same statements. Tyapkin’s findings were not in accord with such a standpoint obtained in fact by *fiat* and, due to Einstein enormous fame and almost “canonization” [3] were perceived almost as a blasphemy. So, both at the beginning and at the end of his paper one can see the editorial disclaimers. Also, after this number of the Journal (UFN), we can see that the famous scientist Ya. B. Zel’dovich is no more the member of the editorial board of the Journal, as he was for a long time before. From [3] we can learn that this was his protest against the publication of Tyapkin’s paper. So, pure logic and physics aside, this is an example of the situation in which we could paraphrase the great classic: If the physical laws affected the interests of the establishment, the establishment would try to change them!

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## О нестандартной интерпретации специальной теории относительности

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В недавней статье [1] мы показали, что парадокс Эренфеста не является парадоксом специальной теории относительности. Мы также проанализировали логическое содержание широко распространённого утверждения о том, что, согласно специальной теории относительности, «движущиеся часы идут медленнее». Было отмечено, что очень часто эти проблемы рассматриваются неправильно. На примере работ Тяпкина [2, 3] мы показываем отрицательное влияние устоявшегося подхода к интерпретации специальной теории относительности на возможность критического рассмотрения данного вопроса.

**Ключевые слова:** парадокс Эренфеста, специальная теория относительности, парадокс часов.