

- Prigogine I., Stengers I., Z chaosu ku porządkowi. Nowy dialog człowieka z przyrodą, tł. K. Lipszyc, Warszawa 1990.
- Reichenbach H.: The Direction of Time, ed. by M. Reichenbach, Berkeley–Los Angeles 1956.
- Szczęsny J., Urbaniec J.: Mechanika kwantowa a upadek mechanicyzmu, [w:] M. Heller, J. Życiński, Wszechświat – maszyna czy myśl?, Kraków 1988, s. 224-232.
- Taylor J. G.: Time in Particle Physics, [w:] Fraser J. T., Haber F.C., Müller G. H. (ed.), The Study of Time, Berlin–Heidelberg–New York 1972, s. 53-58.
- Tempczyk M.: Fizyka a świat realny. Elementy filozofii fizyki, Warszawa 1986.
- Whitrow G. J.: The Natural Philosophy of Time, Oxford 1980.

#### TIME ARROW AND SOME INTERPRETATIONS OF QUANTUM MECHANICS

##### Summary

In the paper I discuss some premises of “quantum mechanics” with regard to the thesis that the time arrow does (not) exist. In this context I consider above all the famous Einstein-Podolsky-Rosen’s experiment (EPR-experiment). I also indicate Schrödinger’s interpretation of wave function “symmetrical” towards time (nomological isotropy) and the peculiar understanding of the pair particle-antiparticle, assuming that the direction of time can be reversed. Eventually, I discuss the issue of measurement in quantum mechanics with which the existence of time arrow (anisotropy) is often linked. If it comes to the interpretations of quantum mechanics, from the point of which I consider the issues in question, then in principle I limit myself to two: the so-called Copenhagen interpretation and David Bohm’s conception of “hidden parameters.” I arrive at a conclusion that the premises of quantum mechanics that are at issue here cannot be sufficient grounds for a conclusive recognition of the reversibility (non-existence) of time arrow.

*Translated by Jan Klos*

**Słowa kluczowe:** strzałka czasu, EPR-eksperyment, równanie Schrödingera, (a)symetria czasowa, niezmienniczość względem odwrócenia czasu, pomiar kwantowy, parametry ukryte.

**Key words:** time arrow, EPR-experiment, Schrödinger’s equation, time (a)symetry, time-reversal invariance, quantal measurements, “hidden variables”.

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