Review of: "Why Backward Time Travel Is Not Possible"

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Potential competing interests: Mathematics, Mathematical physics, quantum mechanics, number theory

I am indeed not convinced at all by the arguments of the author.

My point of view is that of a mathematician.

If one refers to mathematical dynamics, it is well known that the approximation of real numbers in terms of continuous fractions plays an essential role, think for example about rotation numbers or thermodynamical formalism.

Quadratic (positive) numbers are known (by Legendre) to be positive real numbers which representation as a continuous fraction is periodic beyond a treshold. Periodicity beyond such a treshold makes such representation attached to a finite sequence of integers.

Despite the fact that any quadratic irrational is irrational, its representation as a continuous fraction can be then considered as known with exact numerical accuracy.

With respect to physical considerations, I do believe that the classification of real numbers from the point of view of mathematical physics (in particular quatum physics) is between non-Liouville numbers and Liouville numbers, not between irrational and rational. Non- Liouville numbers include algebraic numbers, among them quadratic ones which representation as continuous fraction beyond a treshold.

The arguments of the author rely on the concept of (discrete) time machine with fixed precision and do not allow to justify the impossibility of backward time travel from the physical point of view.

I should add that the mathematical concept of superoscillation (relying on the approximation of the exponential function by Bernstein polynomials), which suggested to Yakir Aharonov and Mikael Berry the concept of weak value in quantum mechanics, violates the fact than such trivial considerations based just on the distinction between rational and irrational numbers may lead to the conclusion reached by the author.