Review of: "Does energy always have mass?"

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Potential competing interests: No potential competing interests to declare.

Review of Does Energy Always have Mass?

I was asked to review "Does Energy Always have Mass?". I find that the reviewer Daniele Funaro very clearly stated the issues with this paper so I offer no more than extensions of this reviewer's comments.

Looking at the "capacitor paradox" on Wikipedia (https://en.wikipedia.org/wiki/Two_capacitor_paradox) the resolution of thought experiments by empirical effects, as suggested in this Wikipedia entry, is a non sequitur. That is, the purpose of thought experiments is to understand a theory, not explain the practice. This thought experiment treats the circuit as being zero resistance. Of course, when the resistance is zero (without inductance or other capacitance in the circuit) the current (at any voltage) must be infinite for an infinitely short period. That is not an error in the thought experiment, but its process. When the resistance is zero in theory, where does half the energy go?, remains (IMHO) a valid theoretical question which the author of the paper "Does Energy Always have Mass?" rightly raises. But the answer offered is, as the first reviewer indicates, "too fancy".

This reviewer suggests an alternative resolution to the capacitor paradox: the closing of the switch increases the one capacitor's energy storage by a factor of two. This addition doubles the entropy (in this case labeled potential energy) of this energy storage system and this increase in entropy is where half the system's energy goes.