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Hawking radiation cannot exist if quantum vacuum fluctuations are gravitational dipoles

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While it is neglected, Hawking radiation is model-dependent; it depends on our model of the quantum vacuum. It was recently suggested that what we call dark matter and dark energy can be explained as the local and global effects of the gravitational polarization of the quantum vacuum by the immersed Standard Model matter. This result appears as the consequence of the working hypothesis that by their nature quantum vacuum fluctuations are virtual gravitational dipoles. Here, as a consequence of the same hypothesis we argue that instead of the nonexistent thermal Hawking radiation there is a much stronger non-thermal radiation which is caused by the conversion of virtual particle-antiparticle pairs into real ones; this conversion happens deep inside the horizon. Contrary to Hawking radiation which leads to the black hole information paradox, there is no information loss paradox within the framework of the quantum vacuum “enriched” with virtual gravitational dipoles.

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