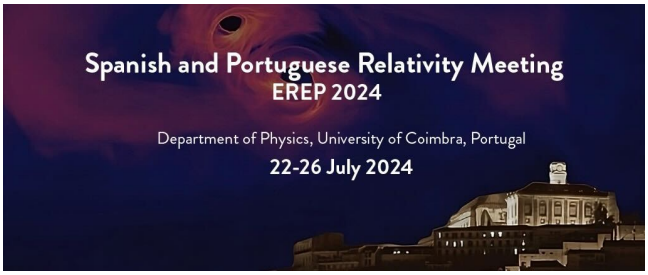

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Kruskal-plus-reservoir: a toy model for spinfoam effects on the low-energy gratitational field

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The quantum nature of matter leads to the exploration of quantum features of the spacetime as a dynamical frame. In this line, the geometry has been theorized to be subject to quantum fluctuations that would constitute a spacetime foam structure at the Planck scale. In this contribution we propose an effective toy model on a Kruskal spacetime to analyze the low-energy effects of the spinfoam structure on the macroscopical description of gravitational field. In order to do so, we model the spinfoam as a thermal bath, following the analogy established by J. Garay in [1], and, employing a reduced Hamiltonian formalism for the Kruskal spacetime, we construct a system-plus-reservoir model where the macroscopic geometry and the foamlike structure are bilinearly coupled.

References

[1] Garay, L. (1998). "Space-time foam as a quantum thermal bath". *Phys. Rev. Lett.*, 80, 2508–2511.

[2] V. Calzada, P., Bargueño, P. & Miret-Artés, S. "Kruskal-plus-reservoir: a toy model for spinfoam effects on the low-energy gravitational field" (To be submitted).

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