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Particle Physics at LPTHE

Vendredi 10 Janvier 2020, 14 :00
LPTHE, library
Domaines : hep-ph

Titre : *The Quantum Hamilton-Jacobi equation and the closed universe*

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Résumé : *Recently, Di Valentino, Melchiorri and Silk argued that the Planck satelite data provide evidence for a closed universe. In this context we recall the derivation of the Quantum Hamilton–Jacobi Equation (QHJE) from a fundamental geometrical principle. Underlying the formalism there exist a basic cocycle condition, which is invariant under D–dimensional finite Möbius transformations. The invariance of the cocycle condition under Möbius transformations can only be implemented consistently if spatial space is compact. Thus, the geometrical formulation of the QHJE predicts that spatial space is compact. Additionally, it implies energy quatisation and the undefinability of quantum trajectories. Evidence for the compactness of the universe may therefore exist in the Cosmic Microwave Background Radiation.*