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An Outsider's Perspective on Information Recovery in de Sitter Space

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Entanglement islands play a crucial role in our understanding of how Hawking radiation encodes information in a black hole, but their relevance in cosmological spacetimes is less clear. In this paper, we continue our investigation of information recovery in de Sitter space and construct a two-dimensional model of gravity containing a domain wall that interpolates between de Sitter space and Rindler space. The Rindler wedges introduce weakly-gravitating asymptotic regions from which de Sitter space can be probed, yielding an outside perspective of the cosmological horizon. In contrast to earlier works, backreaction effects are under control by considering a quantum state that only breaks the thermal equilibrium of the Bunch-Davies state for a finite time. This allows information to be decoded from the Gibbons-Hawking radiation in a controlled fashion.

Presenter: Mr AGUILAR GUTIERREZ, Sergio Ernesto (KU Leuven)

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