

General Relativity and Quantum Cosmology

Equipartition of energy and the first law of thermodynamics at the apparent horizon

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(Submitted on 19 Jan 2010)

We apply the holographic principle and the equipartition law of energy to the apparent horizon of a Friedmann-Robertson-Walker universe and derive the Friedmann equation describing the dynamics of the universe. We also show that the equipartition law of energy can be interpreted as the first law of thermodynamics at the apparent horizon.

Comments: 6 pages, no figure

Subjects: **General Relativity and Quantum Cosmology (gr-qc)**; Cosmology and Extragalactic Astrophysics (astro-ph.CO); High Energy Physics - Theory (hep-th)Cite as: **arXiv:1001.3237v1 [gr-qc]**

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