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Does the Weyl invariant based proposal provide an accurate description of gravitational entropy?

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The evolution of the universe is described by the second law of thermodynamics, which states that the entropy at a point farther in time would have a greater entropy than that of a point in time earlier. The usual description of entropy is by thermodynamic information, where the universe at a time very close to the initial singularity is homogeneous and therefore of a lower entropy state. As time progresses, structure formations increase, which imply an increasing entropy. A geometric description of this was proposed by Penrose, who looked for an account of gravitational clumping in terms of the Weyl curvature, in the Weyl curvature hypothesis. This hypothesised that the increasing entropy of the universe can be described as the increasing Weyl curvature, starting from zero at the initial singularity, and eventually tidal distortions increase due to clumping of matter due to gravitation, and structure formations account for the increasing anisotropies. In this talk, we look at gravitational entropy briefly, looking at the conditions such a proposal should satisfy, and some examples of where this proposal reduces to the familiar entropy and where this proposal requires further investigation.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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Internet talk

Yes

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