

Warm inflation - a reflection of quantum gravity

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The validity of popular cold and warm inflationary scenarios in cosmology is investigated by comparing and contrasting various models. Results indicate that warm inflation can provide a more realistic understanding of the early universe in the light of cosmic microwave background than the conventional cold inflation. The genesis of warm inflation from supersymmetry and string theory emphasise the role of quantum gravity in the early universe. The very nature of warm inflation requires the existence of multifields stemming from superstring theory and hence the warm inflation can be a reflection of quantum gravity. The effect of dissipation coefficient of warm inflation on the Hubble parameter and its role in accounting the Hubble tension is examined. The obtained result may support the dynamical dark energy as suggested by DESI DR2.

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