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Effect of Vacuum Energy Accretion on Primordial Black Holes in Brans-Dicke theory

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Abstract : In this paper, we investigate the evolution of primordial black hole (PBH) in vacuum-dominated era within Brans-Dicke cosmology. We consider the accretion of vacuum energy by PBHs and found that vacuum energy accretion efficiency should be less than 0.61. We also study the evaporation of PBHs where we conclude that larger the value of accretion efficiency longer live the PBHs. We also find that PBHs evaporate at a quicker rate in Brans-Dicke theory compared with Standard Cosmology [1].

[Full Paper]