Modified $f(R)$ Gravity and Thermodynamics of Time-Dependent Traversable Wormholes at Event Horizon

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In the context of modified f(R) gravity theory, we study time-dependent wormhole spacetimes in the radiation background. It is shown that wormholes derived from a particular f(R) model can be traversable. In this framework, we attempt to generalize the thermodynamic properties of these time-dependent traversable wormholes. Finally, at event horizon, the rate of change of total entropy has been discussed.