Thermodynamic geometry of BTZ black hole

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Abstract
In this paper, we considered cosmological constant as a variable and studied properties and the thermodynamics stability of BTZ black hole from a geometric perspective. Also, we examined the correspondence between thermodynamic curvature singularities and phase transition points with different thermodynamic metrics. We found that the Quevedo metric cannot predict the phase transition points in two ensembles. This result is also valid for the Kerr-de Sitter spacetime.

Keywords: phase transition, thermodynamic geometry, stability, black hole

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