

## Horizon thermodynamics and spacetime mappings

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Apparent/trapping horizons replace the teleological concept of event horizon when black holes are dynamical. Conformal transformations and generalized Kerr-Schild transformations are often employed to generate and study dynamical black holes. We study the behaviour under such transformations of thermodynamics quantities for apparent horizons, including the Misner-Sharp-Hernandez mass (internal energy), the Kodama vector, surface gravity, and temperature. These quantities transform differently from what would be expected according to naive arguments.

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