A New Formulation of Conserved Charges and surface gravity in Black Hole Physics

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Abstract: Gravity in Einstein's General Relativity is modeled on a curved manifold, and the Riemann curvature encodes information about the gravitational field. However, conserved charges of black holes are not typically expressed in terms of the curvature of the spacetime, instead they are expressed in terms of the first derivatives of the metric tensor. In this talk, I will describe our recent work on the construction of conserved quantities and the surface gravity of black hole physics that relies on the curvature of spacetime. The formulation makes the role of curvature transparent..

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