

Abstract Submitted
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First-order generalized symmetries of spacetimes admitting two commuting Killing vector fields BALRAJ MENON, University of Central Arkansas — A first-order generalized symmetry of a system of differential equations is an infinitesimal transformation constructed locally from the independent variables, the dependent variables and first derivatives of the dependent variables that maps any solution of the differential equations to a neighboring solution. By applying symmetry group methods, we determine all first-order generalized symmetries of the vacuum Einstein equations for spacetimes admitting two commuting Killing vector fields. Furthermore, as a direct consequence of Noether's theorems, local conservation laws associated with these first-order symmetries are determined.

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