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New charge for BMS symmetries ARUNA KESAVAN, ABHAY ASHTEKAR, The Pennsylvania State University — Conservation laws of asymptotic symmetries are essential to quantify the amount of energy-momentum and angular momentum carried away by gravitational radiation from isolated systems. The asymptotic symmetry group of asymptotically flat spacetimes at null infinity is the Bondi-Metzner-Sachs (BMS) group. While the flux associated to an arbitrary BMS vector field was provided by Ashtekar and Streubel (1981) using symplectic methods, the tensorial expression of a corresponding two-dimensional charge integral linear in an arbitrary BMS vector field has not been available in the literature. We fill this gap by providing such a charge. I will discuss its properties and relation to Geroch's supermomentum and the charge of Dray and Streubel (1984).

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