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Symmetries and Charges of General Relativity at Null Boundaries VENKATESA CHANDRASEKARAN, Univ of California - Berkeley, KARTIK PRABHU , EANNA FLANAGAN, Cornell University — Motivated by the recent suggestion that supertranslations and the associated "soft hair" play an important role in the black hole information problem, we study general relativity at a null boundary using the covariant phase space formalism. We describe the universal structure induced on null boundaries and find the algebra of symmetries preserving this universal structure. We discuss the similarities and differences with the BMS algebra at null infinity. Using the general prescription of Wald and Zoupas, we derive the conserved charges and fluxes of this symmetry algebra. Our analysis is covariant, holds in all dimensions, and applies to general non-stationary null surfaces.

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