

*LIGO's successful detection of gravitational waves has revitalized the theoretical understanding of the angular momentum carried away by gravitational radiation. An infinite dimensional supertranslation ambiguity has presented an essential difficulty for decades of study. Recent advances were made to address and quantify the supertranslation ambiguity in the context of compact binary coalescence. Here we present the first definition of angular momentum in general relativity that is completely free from supertranslation ambiguity. The new definition was derived from the limit of the quasilocal angular momentum defined previously by the authors. A new definition of center of mass at null infinity is also proposed and shown to be supertranslation invariant. Together with the classical Bondi-Sachs energy-momentum, they form a complete set of conserved quantities at null infinity that transform according to basic physical laws.*