APR18-2018-000190

Abstract for an Invited Paper
for the APR18 Meeting of
the American Physical Society

What do LIGOs Black Holes Remember?

DAVIDE GEROSA, Caltech

Black-hole merger observations are now becoming routine. As the available statistics increases, pressing questions on the astrophysical formation of such systems will soon be within our reach. Do LIGO's black holes remember how they formed? What are the key mechanisms to bring the binary to the critical separation where gravitational waves can efficiently drive the merger? And last but not least: how do we find it out? While mass distributions and rates tend to overlap in many formation models, our best hopes lie with eccentricity and spin measurements. Spins, in particular, are arguably the cleanest indicators of some precise formation mechanisms, such as natal kicks, tidal interactions and the occurrence of multiple merger generations.