Further insight into gravitational recoil CARLOS LOUSTO, YOSEF
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We test the accuracy of our recently proposed empirical formula to model the recoil
velocity imparted to the merger remnant of spinning, unequal-mass black-hole bina-
ries. We study three families of black-hole binary configurations, all with mass ratio
q=3/8 (to maximize the unequal-mass contribution to the kick) and spins aligned
(or counter aligned) with the orbital angular momentum, two with spin configura-
tions chosen to minimize the spin-induced tangential and radial accelerations of the
trajectories respectively, and a third family where the trajectories are significantly
altered by spin-orbit coupling. We find good agreement between the measured and
predicted recoil velocities for the first two families, and reasonable agreement for the
third. We also re-examine our original generic binary configuration that led to the
discovery of extremely large spin-driven recoil velocities and inspired our empirical
formula, and find reasonable agreement between the predicted and measured recoil
speeds.

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