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Carlos Oscar Lousto* (colsm@rit.edu), NY, and **Manuela Campanelli, Yosef Zlochower, Marta Volonteri** and **Massimo Dotti**. *Gravitational Recoil From Merging Black-Hole Binaries*.

We explore the newly discovered 'hangup-kick' effect, which amplifies the recoil for configuration with partial spin- orbital-angular momentum alignment, by studying a set of 48 new simulations of equal-mass, spinning black-hole binaries. We propose a phenomenological model for the recoil that takes this effect into account and then use this model, in conjunction with statistical distributions for the spin magnitude and orientations, based on accretion simulations, to find the probabilities for observing recoils of several thousand km/s. Our results indicate that surveys exploring peculiar differential line-of-sight velocities should observe at least one case above 2000 km/s out of four thousand merged galaxies. The probability that a remnant BH receives a total recoil exceeding the 2000 km/s escape velocity of large elliptical galaxies is ten times larger. Probabilities of recoils exceeding the escape velocity quickly rise to 5% for galaxies with escape velocities of 1000 km/s and nearly 20% for galaxies with escape velocities of 500 km/s. In addition the direction of these large recoils is strongly peaked toward the angular momentum axis, with very low probabilities of recoils exceeding 350 km/s for angles larger than 45 deg. with respect to the orbital angular momentum axis. (Received July 10, 2012)