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Unstable Flip-flopping spinning binary black holes CARLOS LOUSTO, JAMES HEALY, Rochester Inst of Tech — We give a unified description of the flip-flop effect in spinning binary black holes and the anti-alignment instability in terms of real and imaginary flip-flop frequencies. We find that this instability is only effective for $0.5 < q < 1$. We provide analytic expressions that determine the region of parameter space for which the instability occurs in terms of maps of the mass ratio and spin magnitudes (q, α_1, α_2). This restricts the priors of parameter estimation techniques from the observation of gravitational waves from binary black holes and is relevant for astrophysical modeling and final recoil computations of such binary systems.

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