Spin-orbit Gravitational Radiation Reaction for Two-body Systems[1] JING ZENG, CLIFFORD WILL, Washington University in St. Louis — We study gravitational radiation reaction in the equations of motion for binary systems with spinning bodies up to post$^{7/2}$-Newtonian order. We write down the most general expression for spin-orbit radiation reaction terms in the binary equations of motion and in the spin evolution equations, and use energy and angular momentum balance and the expressions for energy and angular momentum flux in the far-zone to the desired order to fix a set of arbitrary coefficients. We show that the residual freedom in the undetermined coefficients corresponds to the effects of gauge or coordinate freedom at 3.5PN order.

Jing Zeng
Washington University in St. Louis