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J.D. Mireles James* (jmirelesjames@fau.edu), Florida Atlantic University, 777 Glades Road
P.O. Box 3091, Department of Mathematical Sciences, Boca Raton, FL 33431. *Boundary value problems for transverse collisions, near collision periodic orbits, and near collision homoclinic orbits the restricted three body problem.* Preliminary report.

I'll recall some basic ideas about the Levi-Civita regularization and discuss a boundary value problem formulation of some collision and near collision orbits. The BVP formulation leads naturally to transversality, and I'll give some numerical results for the Circular Restricted Three Body Problem. Time permitting I will discuss also some computer assisted proofs following from these ideas. This is joint work with Maciej Capinski and Shane Kepley. (Received January 15, 2021)