1107-60-164   **Zsolt Pajor-Gyulai*** (`pgyzs@math.umd.edu`), 1603 Lincoln Rd, Washington, DC 20002.
Dynamical systems perturbed by a diffusion driven by a null-recurrent fast motion. Preliminary report.

We consider an ordinary differential equation perturbed by a diffusion that can only move when a one-dimensional null-recurrent fast diffusion is in the neighborhood of the origin. A central limit type theorem is derived for the first correction term in the deviations from the unperturbed system. We also study the special case when the unperturbed system can have a first integral and derive the long time behavior of the vector of these conserved quantities. Joint work with Michael Salins. (Received January 12, 2015)