1052-60-349   **Iddo Ben Ari*** (`benari@math.uconn.edu`), 196 Auditorium Rd Unit 3009, Storrs, CT 06269.
Perturbations to Perron Eigenvalue, Additive Functionals and Limit Theorems.

We present an elementary probabilistic approach to study perturbations to the Perron eigenvalue for certain operators related to generators of Markov processes. From the probabilistic point of view, the method provides a very simple proof of central limit theorems for (the joint) distribution of additive functionals of some Markov processes. An example is the central limit theorem for diffusions with periodic coefficients, originally due to Bhattacharya. From the analytic point of view, the method provides a unified approach to several known results, mostly from the theory of (entry-wise) non-negative irreducible matrices. Work in progress. (Received September 01, 2009)