1057-65-133   **Michele Benzi*** (`benzi@mathcs.emory.edu`), Department of Mathematics and Comp. Science, Mathematics and Science Center, 400 Dowman Drive, Atlanta, GA 30322, and **Paola Boito**. *Computation of matrix functions arising in the analysis of complex networks.*

Quantitative methods of network analysis naturally lead to large-scale computations for functions of matrices associated with graphs. This talk will describe some of the main quantities of interest in network analysis as introduced by Estrada, Hatano, D. Higham and others. A priori bounds and efficient numerical methods for estimating the quantities of interest will be discussed and illustrated by numerical experiments using small-world, range-free, and Erdös-Rényi graphs. (Received January 18, 2010)