

Seminari di Divulgazione Scientifica

Aula A3 "Antonella Fiacca"
Dipartimento di Matematica e Informatica
Università degli Studi di Perugia

28 Novembre 2019
Ore 14.00

"FUNZIONI DI MATRICI E APPLICAZIONI ALLA SCIENZA DELLE RETI"

Prof. Michele Benzi
(Scuola Normale Superiore)

SUNTO: Functions of matrices have long been an object of study in matrix theory, starting with the early works by Cayley and Sylvester laying the foundations of linear algebra. It is well known that matrix functions play an important role in the solution of systems of linear differential equations and more generally in many problems of mathematical physics. In recent years, matrix functions have found novel applications in the analysis of complex graphs (or networks), where they can be used to define graph metrics such as node centrality and communicability measures, to quantify the degree of bipartivity, and to study a variety of dynamical processes. Through these problems, matrix functions have found widespread application in the most disparate fields including brain physiology, social network analysis, transportation networks, cell biology, bibliometry, and many others. In this talk I will give a survey on matrix functions, together with some examples of their use in Network Science. The talk is self-contained and requires only a basic knowledge of linear algebra and analysis.

<http://www.dmi.unipg.it/Seminaridmi>