

THU2F6: Physics of Socio-Economic and Complex Systems - Socio-Economic Networks

Chaired by F. Lillo, Università di Palermo, Palermo, Italy

Time: Thursday 11:30–12:50

Location: Aula 6

Invited talk THU2F6.1 11:30 Aula 6**Block-Structure and Function in Networks** —
•JOERG REICHARDT — Institute for Theoretical Physics,
University of Würzburg, Germany

Patterns of connectivity among groups of nodes are intimately linked to the nodes' function in networks. A novel method to detect such patterns of connectivity and an application to the world trade network are presented.

THU2F6.2 12:10 Aula 6

Spectral properties of uncorrelated random networks — SERGEY DOROGVTSEV^{1,2}, JOSE-FERNANDO MENDES¹, and •ALEXANDER SAMUKHIN^{1,2} — ¹Departamento de Física da Universidade de Aveiro, 3810-193 Aveiro, Portugal — ²A. F. Ioffe Physico-Technical Institute, 194021 St. Petersburg, Russia

We studied spectra of adjacency matrix and of Laplacian

for uncorrelated random network with arbitrary degree distribution, founding minimal degree of the vertex to be most important network's characteristics.

THU2F6.3 12:30 Aula 6

Bosonic behaviour in weighted networks — •DIEGO GARLASCHELLI¹ and MARIA IMMACOLATA LOFFREDO² — ¹Dipartimento di Fisica, Università di Siena, Via Roma 56, 53100 Siena, Italy — ²Dipartimento di Scienze Matematiche ed Informatiche, Università di Siena, Pian dei Mantellini 44, 53100 Siena, Italy

We show that, in contrast with what expected, weighted networks display strong residual structural correlations after randomization. We fully characterize these correlations analytically in terms of Bose statistics. New unbiased weighted definitions are therefore necessary.