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Statistics, Analysis, Multidisciplinary Modeling

Vendredi 19 Janvier 2018, 11 :30
SAMM, C20.13
Domaines : CoRR.CY—math.ST—physics.soc-ph

Titre : *Highlighting central roles in scientific communities : towards new indicators and methods*

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Résumé : *The Feature F-measure is a statistical feature selection metric without parameters that showed good performance for classification, cluster labelling or even for clustering model quality measurement. In this paper, we propose to evaluate its use in the context of real-world graphs and their community structure to benefit from its parameter-free system and its well-evaluated performance. We therefore study on realistic synthetic graphs the correlations between the Feature F-measure and certain centrality measures, but especially with measures designed to characterize the community role of nodes. We show that this measure is linked to the centrality of the nodes of the network, and that it is particularly adapted to the measurement of their connectivity with regard to the structure of communities. We also observe that the usual measures for the detection of community roles are strongly dependent on the size of the communities whereas the ones we propose are by definition linked to the density of the community, which makes their results comparable from one network to another. This therefore offers the possibility to revise the results obtained with classical measures regarding leadership in scientific communities, suppressing the attraction bias which could be due to the single embedding into big communities. This also offers the possibility of applications such as the temporal monitoring of the structure of the communities. Finally, the selection process applied to nodes allows for a universal system, contrary to the thresholds previously established empirically for the establishment of community roles.*