

Abstract Submitted
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A rescaling procedure for complex networks FRANCESCO RAO, Centro Studi e Ricerche Enrico Fermi, Rome Italy, GUIDO CALDARELLI, CNR-INFM Istituto dei Sistemi Complessi, Rome Italy, PAOLO DE LOS RIOS, Ecole Polytechnique Federale de Lausanne, Switzerland, CENTRO FERMI ROME ITALY TEAM, ISTITUTO DEI SISTEMI COMPLESSI ROME, ITALY TEAM, ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE TEAM — We present here a renormalization scheme for graphs. We introduce a decimation procedure by weighting the different nodes through their centrality. In such a way we obtain rescaled graphs with the same statistical properties of the one at the finest scale. We present the results of such method for some numerical simulations of various models. We also apply this procedure to the real graph composed by Internet Autonomous System. We believe that this procedure can help in detecting the scale free-properties of such structures and can be fruitfully applied whenever the size of a system is that large that it is impossible to be visualized as well as described as a whole.

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