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Node-node correlations and transport properties in scale-free networks BIBIANA OBREGON, Posgrado en Ingenieria, UNAM, Mexico, LEV GUZMAN, UPIITA, Instituto Politecnico Nacional, Mexico — We study some transport properties of complex networks. We focus our attention on transport properties of scale-free and small-world networks and compare two types of transport: Electric and max-flow cases. In particular, we construct scale-free networks, with a given degree sequence, to estimate the distribution of conductances for different values of assortative/dissortative mixing. For the electric case we find that the distributions of conductances are affected by the assortative mixing of the network whereas for the max-flow case, the distributions almost do not show changes when node-node correlations are altered. Finally, we compare local and global transport in terms of the average conductance for the small-world (Watts-Strogatz) model

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