

**PERTURBING NETWORKS****Margarida Mitjana**

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For a given base network we modify the values of its conductance. For instance we can either add some edges or delete several of them, as long as the connectedness of the network is preserved. Then, we study the way that the modification affect to the expression of the main operators and parameters of the network. In particular, here we focus in obtaining the Laplacian and the Green function of the perturbed network in terms of the corresponding operators of the base network. We apply the results to compute the effective resistance of generalized linear polyominoes, which in the last decades have deserved the attention of the Organic Chemistry community. This kind of structure includes cycles, linear polyominoes chains, phenylenes or hexagonals chains to name only a few.