1046-31-1467 **Lucio M.G. Prado*** (lprado@bmcc.cuny.edu), Department of Mathematics - BMCC, The City University of New York, 199 Chambers Street, New York, NY 10007. *p-Capacity formulas for Z^n and T_d.*

The aim of this talk is to present some concepts and techniques from p-potential theory on Riemannian manifolds adapted to *finite* and *infinite graphs*. Namely, we will define p-capacity based on similar concept in continuous settings, which will be used to classify the graphs as p-hyperbolic and p-parabolic. The notions of p-hyperbolicity and p-parabolicity are very useful to handle the existence or nonexistence of solutions in the class of p-Dirichlet functions to the Poisson equation for p-Laplacian. Our talk will focus on how to get explicit formulas for the computation of the p-capacity of the lattices Z^n and the homogenous trees T_d , which allow their classification in terms p-hyperbolicity and p-parabolicity.

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