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**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. *Classifying Homogeneous Trees and Lattices.*

An infinite graph can be classified according to its  $p$ -capacity in  $p$ -parabolic or  $p$ -hyperbolic. In particular, homogenous trees  $T_d$  and lattices  $\mathbb{Z}^n$  can be classified by proving results similar to the Kevin-Nevanlinna-Royden theorem (criterion) in the continuous settings. Another approach for their classification, it is directly computing the  $p$ -capacity by using variational techniques.

In this talk, we will focus on both methods mentioned above for the complete classification of homogenous trees  $T_d$ . Finally, if time permits, a formula for the  $p$ -capacity of  $\mathbb{Z}^n$  will be discussed.

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