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Lucio M-G Prado* (lprado@bmcc.bmcc.cuny.edu), Department of Mathematics, BMCC, CUNY, 199 Chambers Street, New York, NY 10007. ***p -Laplacian's Surjectivity on Infinite Graphs.***

Consider a connected locally finite simplicial graph G with vertex set V , we study the problem of the discrete version of the p -Laplacian adapted from Riemannian manifold, and its surjectivity if G is infinite. I will give some overview of some concepts that play central role as p -capacity, infinite p -hyperbolic graphs, and the existence and uniqueness of solution in p -Dirichlet space for p -Poisson equation with finite support source on infinite graphs, and how, in general, we can study surjectivity of the p -Laplacian. It is important to point out that surjectivity of the p -Laplacian has direct relation to the existence of solution of p -Poisson equations. (Received September 26, 2017)