1023-31-1574 **Lucio Prado*** (lprado@gc.cuny.edu), Department of Mathematics - BMCC, The City University of New York, 199 Chambers Street, New York, NY 10007. A Characterization of p-Hyperbolicty/ p-Parabolicity and Decomposition of p-Dirichlet Spaces on Infinite Graphs. Preliminary report.

A characterization of p-hyperbolicity and p-parabolicity on infinite graphs via of the existence or non-existence of p-superharmonic functions is already known. The aim of the present work is to apply techniques of discrete p-potential theory to investigate if similar characterization still hold when p-superharmonicity is replaced by p-harmonicity of function with finite p-Dirichlet energy. Furthermore, we investigate the p-parabolicity and p-hyperbolicity of inifinite graphs in terms of the decomposition of their p-Dirichlet spaces into basic p-potential components. (Received September 26, 2006)