CHEEGER CONSTANTS, EXPONENTIAL GROWTH AND SPECTRUM OF PLANAR GRAPHS

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Abstract. We will discuss relations between local geometry of infinite planar graphs and global invariants. Namely we give estimates for Cheeger's constant (a.k.a. the isoperimetric constant) and exponential growth in terms of combinatorial curvature. These invariants are of importance since they yield estimates for the bottom of the spectrum of the combinatorial Laplacian on the graph. (This is joint work with Norbert Peyerimhoff).