

# **$(d, 1)$ -total labelling of planar graphs with large girth and high maximum degree.**

Andr Raspaud

Department of Computer Science, University of Bordeaux, France

The  $(d, 1)$ -total number  $\lambda_d^T(G)$  of a graph  $G$  is the width of the smallest range of integers that suffices to label the vertices and the edges of  $G$  so that no two adjacent vertices have the same label, no two incident edges have the same label and the difference between the labels of a vertex and its incident edges is at least  $d$ . This notion was introduced in Havet. In this talk, we present our results concerning the planar graphs with large girth and high maximum degree, we have obtained that  $\Delta \cdot \lambda_d^T(G) \leq \Delta + 2d - 2$ . Our results are optimal for  $d = 2$ .