



ON THE LOCAL STRUCTURE OF PLANE GRAPHS EXTREMAL ACCORDING TO WEIGHT OF TRIANGLES

IGOR FABRICI, TOMÁŠ MADARAS, JANA ZLÁMALOVÁ*

The weight of a subgraph H of a graph G is defined to be the sum of degrees (with respect to G) of vertices of H . Borodin proved that every plane graph of minimum degree 5 contains a triangular face of weight at most 17, the bound being precise. According to this result, we explore the family of extremal plane triangulations whose faces are of weight at least 17; we show that graphs of this family contain a variety of light (that is, weight-bounded) subgraphs, among them a 5-star with all vertices of degree at most 7, a 6-star with all vertices of degree at most 9 (both these bounds are precise), and a light 11-cycle.