Thinnest Covering of the Euclidean Plane with Incongruent Circles

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Abstract

In 1958 L. Fejes Tóth and J. Molnar proposed a conjecture about a lower bound for the thinnest covering of the plane by circles with arbitrary radii from a given interval of the reals. If only two kinds of radii can occur this conjecture was in essence proven by A. Florian in 1962, leaving the general case unanswered till now. The goal of this paper is to analytically describe the general case in such a way that the conjecture can easily be numerically verified and upper and lower limits for the asserted bound can be gained.