Compact packings of the plane with three sizes of discs

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Abstract

A compact packing is a set of non-overlapping discs where all the holes between discs are curvilinear triangles. There is only one compact packing by discs of radius 1. There are exactly 9 values of r which allow a compact packing with discs of radius 1 and r. It has been proven that at most 11462 pairs *(r, s)* allow a compact packing with discs of radius 1, r and s. We prove that there are exactly 164 such pairs.

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