

The Apollonian Super Packing

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Abstract

Begin with four mutually tangent circles and greedily fill in the space between them with more circles. The resulting fractal is called an apollonian circle packing. Remarkably, there are some circle packings in which all circles have integer curvatures. In this talk, we algebraically define a so called apollonian super-packing in the complex plane and prove that it contains every possible integral circle packing.

Recommended prerequisites: transformations of the complex plane, group actions, circle inversion, basic linear algebra

