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Abstract

In his 1993 paper, “Square Tilings with Prescribed Combinatorics”, Oded Schramm gave a remarkable one-to-one correspondence between triangulations of planar regions and tilings of rectangles by squares. Schramm uses a discrete version of a notion known as “extremal length” to describe his ideas and formulate his proofs. In this paper, the same ideas are explored but using “modulus,” the inverse of extremal length. In doing so, a new perspective is introduced on how to understand the connection between triangulations and square tilings. Pictures and examples are included to help illustrate just how the use of modulus makes these ideas more accessible and more easily understood. These examples were created through the use of Mathematica code, and several potential applications are discussed. Schramm’s proofs are also clarified.

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