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Convex Combinations of Planar Harmonic Mappings Realized through Convolutions with Half-strip Mappings. Preliminary report.

Recent investigations into what geometric properties are preserved under the convolution of two planar harmonic mappings on the open unit disk \mathbb{D} have often involved half-plane and strip mappings. We introduce a family of half-strip mappings on \mathbb{D} and consider the convolution of members of this family with other harmonic mappings. We will show this convolution decomposes into a convex combination of two planar harmonic mappings and use this decomposition to produce interesting families of convex harmonic mappings. (Received September 22, 2015)