

UNIVALENT HARMONIC MAPPINGS IN THE PLANE

MARIA-JOSÉ MARTIN-GÓMEZ

UNIVERSITY OF EASTERN FINLAND

The class \mathcal{S} of normalized univalent (one-to-one) analytic functions in the unit disk \mathbb{D} has been studied quite thoroughly. The analogous to the family \mathcal{S} in the harmonic case is the class S_H^0 of univalent harmonic mappings $f = h + \overline{g}$ in \mathbb{D} with the normalizations $h(0) = g(0) = g'(0) = 1 - h'(0) = 0$. Many classical results of geometric function theory extend to harmonic mappings, but basic questions remain unresolved. In this talk, we will review some of the properties of functions in S_H^0 and show some recent advances on certain open problems.