

Quasiregular branched covers between manifolds

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We discuss the existence of quasiregular branched covers between n -manifolds with boundary, and its applications. The study of branched covers of this type in dimension three has its origin in Berstein-Edmonds (1979) and Heinonen and Rickman (2002).

We are particularly interested in K -quasiregular branched covers for which the boundary restrictions are Alexander maps of arbitrarily high degrees, while the distortion K remains bounded. All three of Rickman's fundamental ideas – caving, deformation, and sheets – in his Picard construction are used in an essential way in the construction.

As applications, we discuss the higher dimension extensions of Rickman's large local index theorem, Heinonen-Rickman's wild branch sets, and the existence of Julia sets of UQR maps that are wild Cantor sets.

This is joint work with Pekka Pankka.
