

Mihai Cristea: Open, discrete mappings having local ACL^n inverses value problems.

Abstract: We consider open, discrete mappings between domains from \mathbb{R}^n so that $m_n(B_f) = 0$, having local ACL^n inverses on $D \setminus B_f$, satisfying condition (N) so that $H^x(\cdot, f) < \infty$ on B_f and $K_I(f) \in L^1_{\text{loc}}(D)$.

We establish for this class of mappings (or even for larger classes of open, discrete mappings) strong generalizations of one of the most important theorems from the theory of quasiregular mappings, such as equicontinuity results, estimates of the modulus of continuity, Zoric, Picard, Montel and Liouville type results, Schwarz's lemma analogues, eliminability results and boundary extension theorems. The basic instrument is a generalization in our class of mappings of the modular inequality of Poleckii.

In the same time, we extend similar results given in some recent classes of functions, larger than the class of quasiregular functions, as the class of mappings of finite distortion and satisfying condition \mathcal{A} or the class of mappings of finite dilatation with the dilatation in the BMO class.