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**Tomasz Adamowicz\*** (tadamowi@syr.edu), Department of Mathematics, Syracuse University,  
215 Carnegie Bld, Syracuse, NY 13244-1150. *On  $p$ -harmonic mappings in the plane.*

We shall consider  $p$ -harmonic mappings in the plane. These are  $W_{loc}^{1,p}(\Omega, \mathbb{R}^2)$  solutions to the so called  $p$ -harmonic system:

$$\operatorname{div}(|Du|^{p-2}Du) = 0, \quad u = (u^1, u^2) : \Omega \subset \mathbb{R}^2 \rightarrow \mathbb{R}^2, \quad 1 < p < \infty, \quad (1)$$

where  $Du$  is the Jacobi matrix. To every such mapping in the plane with  $p \geq 2$  there corresponds a quasilinear system of first order PDE's which couples the complex gradients of the coordinate functions of the field. We will discuss the ellipticity of such system and describe the relation between planar quasiregular mappings and  $p$ -harmonic mappings. If time permits we will state the  $p$ -harmonic conjugate problem. (Received November 26, 2007)