

Meeting: 1003, Atlanta, Georgia, SS 33A, AMS Special Session on Topics in Geometric Function Theory, I

1003-30-961 **Jang-Mei Wu*** (wu@math.uiuc.edu), Department of Mathematics, University of Illinois, Urbana, IL 61801, and **Robert Kaufman** and **Jeremy Tyson**. *Smooth Quasiregular Maps with Branching in R^4* .

According to a theorem of Martio-Rickman-Vaisala, all nonconstant $C^{n/(n-2)}$ -smooth quasiregular maps in R^n , $n \geq 3$, are local homeomorphisms. Bonk and Heinonen proved that the order of smoothness is sharp in R^3 . We prove that the order of smoothness is sharp in R^4 . For each $n \geq 5$, we construct a $C^{1+c(n)}$ -smooth quasiregular map in R^n with nonempty branch set. (Received October 02, 2004)