1050-35-175 **Daniel Faraco*** (daniel.faraco@uam.es), Universidad Autonoma de Madrid, Campus de Cantoblanco, Departamento de Matemáticas, Ciencias, 28049 Madrid, Spain. *Gamma quasiregular mappings and nonlinear planar eliptic systems.*

A weakly differentiable map $f : \Omega \to \mathbb{R}^n$ is called quasiregular if it satisfies almost everywhere the pointwise constraint,

$$\|Df(x)\|^n \leq K \det(Df(x)) \tag{1}$$

The theory of quasiregular mappings has been extensively developed in the last century and prove to be a useful tool in partial differential equations, geometry, complex dinamics and more recently in the Calculus of Variations. It is well known that equation (**??**) yields fascinating analitical and topological properties to the mapping f.

In the study of the compactness of approximate solutions to diferential inclusions with Székelyhidi we discovered a new class of quasiregular mappings. Given a Jordan curve in matrix space, called Γ we say that f is Γ-quasiregular if for every $p \in \Gamma$ $f - p$ is quasiregular.

In the plane these mappings are naturally related to a broad class of nonlinear elliptic systems. I will discuss this connection together with the relation between the injectivity properties of this class of maps and the range of the differential.

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