

DIFFERENTIABLE FUNCTIONS WITH SURJECTIVE GENERALIZED JACOBIANS

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In this talk we start with a brief discussion about the possible values that the limiting and Clarke Jacobians can take in the class of differentiable locally Lipschitz functions (defined on finite dimensional spaces). Then, we construct a differentiable locally Lipschitz function $f : \mathbb{R}^n \rightarrow \mathbb{R}^m$ such that, for any nonempty compact connected C subset of $\mathbb{R}^{n \times m}$, we can find a point $x \in \mathbb{R}^n$ such that C coincides with the limiting Jacobian of f at x . In particular, the Clarke Jacobian of f ranges over all its possible values.

This work has been done in collaboration with Aris Daniilidis and Robert Deville.