**Implicit Function Theorem for Lipschitz mappings into metric spaces**

I will talk about my recent paper with my former graduate student Scott Zimmerman and also about more recent results with my graduate student Behnam Esmayli. We prove a version of the implicit function theorem for Lipschitz mappings $f : \mathbb{R}^{n+m} \supset A \to X$ into arbitrary metric spaces. As long as the pull-back of the Hausdorff content $\mathcal{H}^n_\infty$ by $f$ has positive upper $n$-density on a set of positive Lebesgue measure, then, there is a local diffeomorphism $G$ in $\mathbb{R}^{n+m}$ and a Lipschitz map $\pi \to \mathbb{R}^n$ such that $\pi \circ f \circ G^{-1}$, when restricted to a certain subset of $A$ of positive measure, is a the orthogonal projection of $\mathbb{R}^{n+m}$ onto the first $n$-coordinates. This may be seen as a qualitative version of a similar result of Azzam and Schul. The main tool in our proof is a metric change of variables introduced in a paper of Hajlasz and Malekzadeh. This approach can also be used to provide a simplified proof of the coarea formula for Lipschitz mappings into metric spaces.