

# The wild ramification locus

Katharina Hübner (Heidelberg)

This is a joint project with Michael Temkin. We consider an étale morphism  $f : Y \rightarrow X$  of adic spaces. The residue field extension for a point  $y \in Y$  mapping to  $x \in X$  is a finite separable extension of valued fields  $k(y)/k(x)$ . We want to understand the ramification behavior of this field extension for varying  $y$ . In particular we study the locus  $R_f \subseteq Y$  where this extension is wildly ramified. Proving that  $R_f$  is big in an appropriate sense (in particular it doesn't contain isolated points) allows to compare different notions of tameness for étale morphisms of schemes. In contrast to Kerz's and Schmidt's work from 2010 we can avoid using resolution of singularities by working with valuation theoretic methods.