ENRIQUES DIAGRAMS AND EQUISINGULAR STRATA OF FAMILIES OF CURVES

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Abstract. Given a singular point on a curve lying on a smooth surface one associates a weighted sequence of infinitely near points, combinatorially expressed by an Enriques diagram. The singularity defines a fat point on the surface, and the Enriques diagram can be recovered also from the fat point. For a given Enriques diagram and a given surface, the set of fat points with this diagram forms a smooth subscheme of the Hilbert scheme of the surface. The dimension of the subscheme is expressed in terms of the numerical invariants of the diagram, and I will relate the latter to the numerical invariants of the singularity. I will briefly mention how this theory can be applied to study curves in a family with singularities of prescribed topological type.

This is joint work with Steven Kleiman.

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