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Intersection-smooth equivalence relations

This talk is based on a joint work in progress with Benjamin Miller and Zoltán Vidnyánszky. We introduce the notion of intersection reduction, a generalization of the usual notion of Borel reduction between equivalence relations on Polish spaces. Our main result is a generalization of Kechris–Louveau's $\mathbb{E}_1$-dichotomy to the class of so-called *intersection-smooth* equivalence relations, that is, the class of all equivalence relations that are intersection-reducible to the equality on $\mathbb{R}$. This class contains, in particular, all countable unions of essentially countable equivalence relations, as well as $\mathbb{E}_1$. Consequences and connected results will also be presented.