p-adic simplicial volumes

Speaker: Steffen Kionke

Abstract: The simplicial volume defined by Gromov measures the complexity of the fundamental class of a manifold based on the real numbers and the usual absolute value. It seems natural to study variations of simplicial volume, which are obtained by altering the coefficients and the underlying notion of "absolute value". This construction provides a rich family of invariants of manifolds. In this talk we introduce such variations of simplicial volume and, in particular, discuss p-adic simplicial volumes and some of their basic properties. To provide an example we compute the p-adic simplicial volumes of surfaces using a combinatorial method.

Our understanding of p-adic simplicial volumes is currently rather incomplete and we plan to mention a number of open problems.

All this is based on joint work with Clara Löh.