

DALHOUSIE MATHEMATICS COLLOQUIUM

Monday November 19 2018, 3:30 pm, Chase 319

Speaker: Daniele Turchetti

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Analytic geometry over \mathbb{Z}

This talk is intended to be a friendly introduction to analytic spaces over the rational integers \mathbb{Z} . Motivated by arithmetic and algebro-geometric problems, I will present Poineau's theory of *Berkovich spaces over \mathbb{Z}* , that are spaces of valuations enjoying nice topological properties. These spaces naturally contain various sorts of simplicial complexes, allowing the use of combinatorial methods coming from tropical geometry. At the same time, they encode information about the interplay between complex, real, and p -adic geometries, making them suitable to solve arithmetic problems. As an instance of this, I will explain how the combinatorial and arithmetic sides can be exploited to construct and study families of classical geometric objects such as Kleinian groups and algebraic curves (joint work with Jérôme Poineau).