

---

## **Asymptotically uniformly smooth Banach spaces**

Matias RAJA (Universidad de Murcia — Spain)

---

The class of asymptotically uniformly smoothable Banach spaces has been considered in connection with several problems of Nonlinear Functional Analysis, as the differentiability of Lipschitz functions, the uniform classification of Banach spaces or the fixed point property. The known characterizations for those spaces come from  $p$ -estimates when finite dimensional block decompositions are available or via duality by means of the Szlenk index. In this talk we will provide a different characterization for the existence of asymptotically uniformly smooth renorming using an ordinal type index defined for subsets of the space. Among the applications, we prove that the modulus of asymptotic uniform smoothness is the same for all the non-asymptotically uniformly smoothable Banach spaces.