



## Analysis Seminar

**Title:** A topological characterization of dual strict convexity in Asplund spaces II

**Speaker:** Richard Smith

**Date:** Tue 30th April 2019 at 4:00PM

**Location:** Seminar Room SCN 1.25

**Abstract:** In 1975 Lindenstrauss asked whether it is possible to characterize Banach spaces  $X$  that admit an equivalent strictly convex norm, in terms of other linear or topological properties of  $X$ . We provide a partial answer to this problem in the case of dual spaces, by showing that if  $X$  is an Asplund space, then it admits an equivalent norm having a strictly convex dual norm if and only if the dual unit sphere  $S_{X^*}$  (equivalently  $X^*$ ), endowed with the  $w^*$ -topology, possesses a certain topological property. It follows that this ostensibly geometric property of the space can in fact be characterised in purely non-linear, topological terms. In the second of two talks we will sketch the proof of this characterization.