Speaker: Steve Dilworth

Title: The Banach-Mazur Rotation Problem

Abstract: A Banach space is transitive if its group of surjective isometries is transitive on the unit sphere. The Banach-Mazur rotation problem asks whether every separable transitive space is a Hilbert space. Not much is known either for or against. In a 2013 paper Ferenczi and Rosendal proved the existence of uniformly convex spaces that are not isomorphic to any almost transitive space (almost transitivity means that the orbits of the isometry group are dense in the unit sphere). Actually, this is a corollary of a more powerful result. Subsequently it was proved that the sequence spaces ℓ_p are not isomorphic to almost transitive spaces unless $p = 2$. These results will be described in the seminar talk.