Analysis Seminar

Title: Real Extreme points of Spaces of Complex Polynomials

Speaker: C. Boyd

Date: Tue 7th November 2017 at 4:00PM

Location: SCN 125

Abstract: Given a Banach space E and a positive integer n we let $\mathcal{P}_I({}^nE)$ denote the space of all n-homogeneous integral polynomials on E. This space generalise the trace class operators and plays an important role in the duality theory of spaces of homogeneous polynomials. When E is a real Banach space and $n \geq 2$ it is known that the set of extreme points of the unit ball of $\mathcal{P}_I({}^nE)$ is equal to the set $\{\pm\varphi^n : \|\varphi\| = 1\}$. When E is a complex Banach space a characterisation of the set of extreme points of the unit ball of $\mathcal{P}_I({}^nE)$ is not so easy to establish. In this talk, I will look at what can be said for low values of n and small linear combinations of extreme points. This is joint work with Anthony Brown.