



## Analysis Seminar

**Title:** The Regular Radius of Convergence

**Speaker:** C. Boyd

**Date:** Tue 9th April 2024 at 3:00PM

**Location:** E0.32 (beside Pi restaurant)

**Abstract:** We will begin by recalling the definition of a complex Banach lattice, regular homogeneous polynomial and the modulus,  $|P_m|$ , of a regular polynomial  $P_m$ . Given a Taylor series,  $f = \sum_{m=0}^{\infty} P_m$ , about  $a$  in a complex Banach lattice  $E$  with each  $P_m$  a regular  $m$ -homogeneous polynomial we define the radius of regular convergence of  $f$ ,  $|r|(f, a)$ , as the supremum of  $\rho > 0$  such that  $\sum_{m=0}^{\infty} |P_m|$  converges on  $B(a, \rho)$ . We extend the definition of homogeneous Bohr radius of Defant, García and Maestre to Banach lattice and see how these radii determine a lower bound for the ratio between the radius of regular convergence and the (standard) radius of convergence. This allows us to determine the radius of regular convergence for specific Banach lattices and uncover the relationship between Taylor series and monomial convergence on Banach spaces with an unconditional basis.

This is joint work with R. Ryan and N. Snigireva.

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