Paul GARTSIDE

Basic Maps

Abstract: Ostrand, building on Kolmogorov's solution of Hilbert's 13th Problem, proved that for every compact finite dimensional metric space X there is a finite family, $\phi_1, \ldots, \phi_n$ of continuous real valued maps on X such that *every* continuous $f : X \to \mathbb{R}$ can be written in the form $f = \sum_{i=1}^{n} g_i \circ \phi_i$ for some continuous maps $g_1, \ldots, g_n : \mathbb{R} \to \mathbb{R}$. Thus these ϕ_i form a 'basic' family for all continuous real valued maps on X.

The speaker will discuss his recent work with Feng Ziqin characterizing exactly which spaces have a finite basic family, and on the minimal size of basic families.