

**Abstract:**

In this talk we will describe work on Littlewood's conjecture in Diophantine approximation and some results on the distribution of sequences. We answer a question posed by Michel Mendes France concerning normality to non-integer bases and a question of Wolfgang Schmidt concerning matrix normality. The work on Littlewood's conjecture is joint with Sanju Velani and the work on normality is joint with Gavin Brown and William Moran. The methods adopted to study these questions will be the construction of an appropriate singular measure.