

abstract

MEMBERS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

A fake projective space is a smooth complex projective algebraic variety which is uniformized by the unit ball in \mathbb{C}^n and whose Betti numbers are the same as that of $\mathbb{P}^n_{\mathbb{C}}$. The first example of a fake projective plane ($n=2$) was constructed by David Mumford using p -adic uniformization. Last year, in a joint work with Sai Kee Yeung we constructed twelve distinct classes of fake projective planes. In a recent work with him we show that there are four 4-dimensional arithmetically defined fake projective spaces and none in higher dimension which are arithmetically defined. In the talk I will present a survey of these results, open problems, and describe the techniques used to prove our results.