

An (n-fold) Kuga variety is a natural generalisation of the universal family of a moduli space of abelian varieties: each fibre is the n-fold product of the Kummer variety associated to the corresponding abelian variety. In this talk, we will describe the results and the general ideas of two papers. The first (joint with Salvati Manni and Sankaran) determines the Kodaira dimension of n-fold Kuga varieties for principally polarised Abelian g-folds. The other gives a lower bound of (n, p) for which the n-fold Kuga variety of $(1, p)$ -polarised abelian surfaces has Kodaira dimension 3 (the maximum). The starting point of both papers is a theorem of Ma, which compares the rate of growth of the space of some cusp forms and the Kodaira dimension of the Kuga variety.