TWO LECTURES BY RICCARDO SALVATI MANNI

Modular forms, hyperelliptic loci and applications (80 minutes)

We will explain a ring homomorphism from the ring of modular forms to the ring of binary invariant. We will report about classical results due to Thomae, Igusa, Mumford and some recent consequences that lead to some interesting applications concerning the slope of divisors and covering of the moduli spaces of curves in low genera.

Siegel modular varieties with a Calabi-Yau model (80 minutes)

We will describe some Siegel modular varieties which admit a weak Calabi–Yau model. Not all of them admit a projective model. We will exhibit criterions for the projectivity. We will discuss a significative example which cannot admit a projective model. We shall give a method for computing (in the projective case) Hodge number.