Orbital L-functions for the space of binary cubic forms and their applications

Takashi Taniguchi, Kobe University

The space of binary cubic forms is an example of prehomogeneous vector spaces, and the associated zeta functions were studied extensively by Shintani. In this talk, we introduce the notion of orbital L-functions for this space and investigate their analytic properties. We also explain their several applications, including counting cubic fields in arithmetic progressions. This is a joint work with Frank Thorne.