CASTS TALKS

The 7th East Asia Number Theory Conference

Grothendieck's duality conjecture on connected components of special fibers of

abelian varieties

Dr. Takashi Suzuki

2018 - 02 - 06 (Tue.)
11:10 - 12:00
101, Mathematics Research Center Building (ori. New Math. Bldg.)

Given an abelian variety and its dual over a local field with perfect residue field, we have the finite groups of connected components of special fibers of their Neron models. Grothendieck, in SGA 7, defined a canonical pairing between these two finite groups and conjectured that the pairing is perfect. In this talk, I will explain my proof of this conjecture. The key construction is a Grothendieck topology on the category of (transcendental) field extensions of the residue field, called the rational etale site. Cohomology groups of local fields with coefficients in abelian varieties can be viewed as sheaves on this new site. With this functorial formalism, we can reformulate Grothendieck's conjecture in such a way that allows us to do Galois descent. Since the semistable case of the conjecture is already known (by Werner), the general case follows.

CASTS

Center for Advanced Study in Theoretical Sciences, NTU