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數學系
香港中文大學

Representation and Number Theory Seminar

Normalization in the integral models of Shimura varieties of abelian type

by

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MIT

Abstract

Shimura varieties are moduli spaces of abelian varieties with extra structures. Over the decades, various mathematicians (e.g. Rapoport, Kottwitz, etc.) have constructed nice integral models of Shimura varieties. In this talk, I will discuss some motivic aspects of integral models of Hodge type (or more generally abelian type) constructed by Kisin and Kisin-Pappas. I will talk about my recent work on removing the normalization step in the construction of such integral models, which gives closed embeddings of Hodge type integral models into Siegel integral models. I will also mention an application to toroidal compactifications of such integral models.

A key ingredient in the parahoric version of the main theorem is a new CM lifting result on parahoric level integral models of Shimura varieties, which uses as input a new result on connected components of affine Deligne–Lusztig varieties (joint with Gleason and Lim). This resolves a long-standing conjecture on connected components of affine Deligne–Lusztig varieties. If time permits, I will give a sketch on how to deduce the new CM lifting result, as well as various other applications to integral models of Shimura varieties.

Date : 2 May 2023 (Tuesday)
Time : 9:00am – 10:00am
Zoom :
<https://cuhk.zoom.us/j/98406698458?pwd=ejBFQXBtDU2bTNFZnZhaUINMHJUdz09>
Meeting ID: 984 0669 8458
Passcode: sesame

All are Welcome