

**Speaker:** Lue Pan

**Title:** Some vanishing results for rational completed cohomology of Shimura varieties

**Abstract:** Let  $p$  be a prime number. Emerton introduced the  $p$ -adically completed cohomology, which admits a representation of some  $p$ -adic group and can be thought of as some spaces of  $p$ -adic automorphic forms. In this talk, I want to explain that for Shimura varieties, sufficiently regular infinitesimal characters of the  $p$ -adic group can only show up in the middle degree of the completed cohomology. The proof is based on a very recent result of Bhatt on Kodaira vanishing in mixed characteristic and an old idea of using translation functors. This is joint work in progress with Kai-Wen Lan.