# SCMS Colloquium

## *BEILINSON-BLOCH-KATO CONJECTURE FOR SOME RANKIN-SELBERG MOTIVES*

**Speaker: Liang Xiao**

**Beijing International Center for Mathematical Research**

**Time：Tue, Jun 22nd, 10:00-11:00**

**Venue: Room 102, SCMS**

**Abstract:** The Birch and Swinnerton-Dyer conjecture is known in the case of rank 0 and 1 thanks to the foundational work of Kolyvagin and Gross-Zagier. In this talk, I will report on a joint work with Yifeng Liu, Yichao Tian, Wei Zhang, and Xinwen Zhu. We study the analogue and generalizations of Kolyvagin's result to the unitary Gan-Gross-Prasad paradigm. More precisely, our ultimate goal is to show that, under some technical conditions, if the central value of the Rankin-Selberg L-function of an automorphic representation of $U(n)*U(n+1)$ is nonzero, then the associated Selmer group is trivial; Analogously, if the Selmer class of certain cycle for the $U(n)*U(n+1)$-Shimura variety is nontrivial, then the dimension of the corresponding Selmer group is one.   If time permits, I will give some indication of how the study of geometry of Shimura varieties help to prove such an arithmetic result.