Speaker: Zhiwei Yun

Title: Motives and the inverse Galois problem

Abstract: We will use geometric Langlands theory to solve two problems simultaneously. One is Serre's question that whether there exist motives over $\mathbb{Q}$ with motivic Galois groups of type E_8 or G_2; the other is whether there are Galois extensions of $\mathbb{Q}$ with Galois groups $E_8(p)$ or $G_2(p)$ (the finite simple groups of Lie type). The answers to both questions are YES.