THE TWENTIETH COLLOQUIUMFEST

Title: *The algebraic Sato-Tate group for AHC motives*

Speaker: Grzegorz Banaszak

Abstract:
Let M be a motive over a number field K in the Deligne's motivic category for absolute Hodge cycles. In an effort of proper setting of the Sato-Tate conjecture concerning the equidistribution of Frobenius elements in the representation of the Galois group G_K on the l-adic realization of $M \otimes_K \overline{K}$, one of attempts is the introduction of the algebraic Sato-Tate group $AST_K(M)$. Maximal compact subgroups of $AST_K(M)(\mathbb{C})$ are expected to be the key tool for the statement of the Sato-Tate conjecture for M. An explicit construction of $AST_K(M)$ will be presented following an idea of J.-P. Serre. The arithmetic properties of $AST_K(M)$ will be discussed along with applications for the Sato-Tate conjecture. This is joint work with Kiran Kedlaya.