

Speaker: Kazuya Kato

Title: $SL(2)$ -orbit theorems in Hodge theory and in arithmetic

Abstract: $SL(2)$ -orbit theorems in Hodge theory describe the real analytic behaviors of a degenerating Hodge structure. We can prove an analogous $SL(2)$ -orbit theorem in non-archimedean algebraic geometry which describes the behaviors of monodromy operators in degeneration. By combining these, we can study the behavior of a family of height pairings of algebraic cycles on varieties over a number field. This study is related to the analogy between degenerating variation of Hodge structure on complex analytic spaces and its counterpart on varieties over finite fields.