A semi-canonical reduction for periods of Kontsevich-Zagier

Abstract: Introduced by M. Kontsevich and D. Zagier in 2001, periods are complex numbers whose the real and imaginary parts are values of absolutely convergent integrals of \( \mathbb{Q} \)-rational functions over real \( \mathbb{Q} \)-semi-algebraic domains both defined by rational coefficients. The Kontsevich-Zagier period conjecture affirms that any polynomial relation between periods can be obtained by linear relations between their integral representations, expressed by classical rules of integral calculus. In this talk, we present a semi-canonical reduction for periods using desingularization, which allows us to develop a geometrical approach for periods and their related problems.