

# 國立清華大學數學系學術演講

## NTHU MATH Colloquium

講題 Deligne's Conjecture and the Cross-Ratio Formula

講者 Prof. Shih-Yu Chen (NTHU)

時間 2026.06.01 (Mon.) 16:00 – 17:00

地點 第三綜合大樓**2樓 Room 201**

茶會 15:30, Room 707

### Abstract

At the 1977 Corvallis conference, P. Deligne proposed a remarkable conjecture describing the algebraicity of critical  $L$ -values in terms of motivic periods. The conjecture has recently been settled for pure motives of rank one. In all other known cases in the literature, proofs typically depend on integral representations of the relevant  $L$ -functions. In the framework of the Langlands–Clozel correspondence, we introduce, on the automorphic side, a cross-ratio formula for the critical values of Rankin–Selberg  $L$ -functions. This formula provides a new method for addressing Deligne's conjecture. In this talk, we will introduce Deligne's conjecture on the symmetric power  $L$ -functions of modular forms, and present the cross-ratio formula.