

國立中央大學數學系

專題演講

主 講 人：鄭堯副教授(淡江大學應用數學與數據科學學系)

演講題目：Newform conjecture for p -ADIC SO_{2n+1}

演講茶會：2026年04月30日(星期四) 15:30~16:00

茶會地點：中央大學鴻經館 M306

演講時間：2026年04月30日(星期四) 16:00~17:00

演講地點：中央大學鴻經館 M107

Abstract：

Local newforms have their roots in the classical theory of Atkin–Lehner for modular newforms established in the 1970s. Modular newforms are cusp forms that are simultaneously eigenfunctions of all Hecke operators and are important objects in number theory and representation theory.

Around the same time, Casselman developed the theory of local newforms for generic representations of p -adic GL_2 . As the name suggests, local newforms are the “local components” of modular newforms. Casselman’s results were subsequently extended to other classical groups by many authors. In particular, Roberts and Schmidt developed the theory of local newforms for generic representations of p -adic $PGSp_4$.

By the accidental isomorphisms $PGL_2 \simeq SO_3$ and $PGSp_4 \simeq SO_5$, the results of Casselman and Roberts–Schmidt can be placed into a single framework. Building on these results, Gross proposed a conjectural theory of local newforms for generic representations of the split p -adic group SO_{2n+1} .

In this talk, we will begin with a brief introduction to the Atkin–Lehner theory. After this, we will state the newform conjecture for p -adic SO_{2n+1} proposed by Gross. Then we will present our recent progress toward this conjecture. If time permits, we will also give a proof sketch.