

國立中央大學數學系

專題演講

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演講題目：ON REPRESENTATIONS OF $\mathrm{Mp}_2(E)$ DISTINGUISHED BY $\mathrm{SL}_2(F)$

演講茶會：2025年11月20日(星期四) 15:30 ~ 16:00

茶會地點：中央大學鴻經館M306

演講時間：2025年11月20日(星期四) 16:00 ~ 17:00

演講地點：中央大學鴻經館M107

Abstract :

ABSTRACT. Let G be a group and H be its subgroup. Given irreducible representations π of G and σ of H , the restriction problem in the representation theory concerns the following problems:

- (1) When does $\mathrm{Hom}_H(\pi|_H, \sigma) \neq 0$?
- (2) If $\mathrm{Hom}_H(\pi|_H, \sigma) \neq 0$, what is its dimension?

When σ is the trivial representation of H , restriction problem is also known as distinction problem (hence the title).

When G is finite or a compact classical groups, these problems have satisfactory answers in the literature. More recently, the celebrated Gan-Gross-Prasad conjecture proposes conjectural answers to restriction problems for a more general class of classical groups, including those over p -adic fields. Their conjecture has been settled in many cases, and the study of restriction problems remains very active in representation theory.

In a recent joint work with Hsin-Yen Ho and Hao-An Wu, we consider the case that is not covered in their conjecture, and obtained satisfactory answers. More concretely, let E/F be a quadratic extension of p -adic fields, and let $\mathrm{Mp}_2(E)$ denote the non-trivial twofold cover of $\mathrm{SL}_2(E)$. The group $\mathrm{SL}_2(F)$ embeds into $\mathrm{Mp}_2(E)$ naturally, and we study the distinction problem for

$$(G, H) = (\mathrm{Mp}_2(E), \mathrm{SL}_2(F)),$$

π a genuine representation of $\mathrm{Mp}_2(E)$, and σ the trivial representation of $\mathrm{SL}_2(F)$.

In this talk, I will present our results and explain how we obtained them.