

中央研究院數學研究所

Institute of Mathematics, Academia Sinica

Taipei Postdoc Seminar

Speaker : Dr. Peng-Jie Wong
(PIMS, University of Lethbridge)

Title : **Group theory and the Artin holomorphy conjecture**

Abstract : Let K/k be a Galois extension of number fields with group G , and let ρ be a non-trivial irreducible representation of G of dimension n . Nearly a century ago, Artin conjectured that the Artin L -function attached to ρ extends to an entire function. It is well-known that when $n = 1$, this conjecture follows from Artin reciprocity (=the class field theory). Also, by the works of Langlands and many others, several significant progress has been made for $n = 2$. However, in general, the Artin holomorphy conjecture is still open.

In a slightly different vein, via his induction on characters, Brauer obtained the meromorphy for all Artin L -functions. As Brauer's proof is pure group-theoretic, it is expected that group theory should play a role in the game.

In this talk, we shall emphasise how to use elementary group theory to study the Artin holomorphy conjecture. In particular, we shall introduce the notion of “nearly supersolvable group”, which can be seen as a generalisation of supersolvable groups (and hence abelian groups). If time permits, we will explain how such groups lead to a proof of the Artin holomorphy conjecture for Galois extensions of degree less than 60.

(For the most of this talk, only the knowledge of undergraduate level algebra will be assumed.)

Time : 11:00 – 12:30, Wednesday, December 6, 2017

Venue : Room 638, Astro-Math. Buidling (NTU Campus)

Organizer : Chih-Wei Chen (NCTS), Jyun-Ao Lin (Academia Sinica)

Refreshment : 10:30

中央研究院數學研究所 敬上

2017.11.28