

國立陽明交通大學應用數學系

學術演講公告

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講 題：An introduction to the Birch and Swinnerton-Dyer conjecture

時 間：111 年 5 月 17 日(星期二) 下午 2:00 –3:00

遠距進行 Google Meet: meet.google.com/aeo-prqy-kpy

Abstract

Let E be an elliptic curve over \mathbb{Q} . Together with the point at infinity, the set of rational points $E(\mathbb{Q})$ on E becomes an abelian group. By Mordell's theorem, the abelian group $E(\mathbb{Q})$ is finitely generated and hence $E(\mathbb{Q}) \cong \mathbb{Z}^r \oplus T$ for some finite (abelian) group T and an integer $r \geq 0$ called the rank of E . It is known that the order of T is less than 16 and hence r measures the size of $E(\mathbb{Q})$. On the other hand, to E one can attach a Dirichlet series $L(E,s)$ which originally only converges absolutely for $\operatorname{Re}(s) > 3/2$.

By the Modularity theorem of Wiles et. al., $L(E,s)$ has holomorphic continuation to the whole complex plane and hence it makes sense to consider the order of vanishing $r \geq 0$ of $L(E,s)$ at $s=1$. The celebrated Birch and Swinnerton-Dyer conjecture asserts that $r=r'$. In this talk, we will give an introduction to the Birch and Swinnerton-Dyer conjecture and also survey some of its recent developments.

敬請公告 歡迎參加

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