

No.18

Data scientific study of L-functions

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L-functions are central to contemporary number theory. They are featured in the Riemann hypothesis and the conjecture of Birch and Swinnerton Dyer (both of which are Millennium Prize Problems), and also in the Langlands programme. L-functions are a type of arithmetic generating function, the coefficients of which are expected to encode deep arithmetic information. In this talk, we will explore how data science can uncover hidden structures in families of L-functions. A notable example is the so-called murmuration of elliptic curves.