

**Lario, Joan-Carles; Somoza, Anna**

**The Sato-Tate conjecture for a Picard curve with complex multiplication (with an appendix by Francesc Fité).** (English) [Zbl 1440.11100](#)

Lario, Joan-Carles (ed.) et al., Number theory related to modular curves: Momose memorial volume. Proceedings of the Barcelona-Boston-Tokyo Number Theory Seminar in memory of Fumiyuki Momose, Barcelona, Spain, May 21–23, 2012. Providence, RI: American Mathematical Society (AMS). Contemp. Math. 701, 151-165 (2018).

Summary: Let  $C/\mathbb{Q}$  be the genus 3 Picard curve given by the affine model  $y^3 = x^4 - x$ . In this paper we compute its Sato-Tate group, show the generalized Sato-Tate conjecture for  $C$ , and compute the statistical moments for the limiting distribution of the normalized local factors of  $C$ .

For the entire collection see [\[Zbl 1384.11002\]](#).

**MSC:**

- [11G10](#) Abelian varieties of dimension  $> 1$
- [11G15](#) Complex multiplication and moduli of abelian varieties
- [11G30](#) Curves of arbitrary genus or genus  $\neq 1$  over global fields
- [11G40](#)  $L$ -functions of varieties over global fields; Birch-Swinnerton-Dyer conjecture

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**Keywords:**

[Sato-Tate conjecture](#); [Picard curve](#)

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