Geometric quadratic chabauty and other topics in number theory

Lido, G.M.

GEOMETRIC QUADRATIC CHABAUTY AND OTHER TOPICS IN NUMBER THEORY

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden
op gezag van rector magnificus prof. dr. ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op dinsdag 12 oktober 2021
klokke 11.15 uur

door

Guido Maria Lido
geboren te Roma, Italia, in 1992

Promotor: Prof. dr. Bas Edixhoven (Universiteit Leiden)

Promotor: Prof. dr. René Schoof (Università di Roma "Tor Vergata")

Samenstelling van de promotiecommissie:

Voorzitter: Prof. dr. F.A. van der Duijn Schouten

Secretaris: Prof. dr. Peter Stevenhagen (Universiteit Leiden)

Prof. dr. Davide Lombardo (Università di Pisa)

Prof. dr. Marusia Rebolledo (Université B. Pascal Clermont-Ferrand 2)

Prof. dr. Michael Stoll (Universität Bayreuth)

This work was carried out at Università di Roma "Tor Vergata" and Universiteit Leiden. It was funded jointly by Università di Roma "Tor Vergata" and Universiteit Leiden.

The images in the front cover of this thesis, from the bottom to the top, are: an illustration of the geometric quadratic Chabauty method drawn by Sachi Hashimoto, available in [51], and representations of the modular curves $X_{\mathrm{ns}}(13)$ and $X_{\mathrm{ns}}^{+}(13)$, drawn using the equations in [36].

The illustration in the back cover has been drawn by Giulia Caudullo and represents the descent algorithm in Chapter 4.

Contents