

Zeitschrift: L'Enseignement Mathématique
Herausgeber: Commission Internationale de l'Enseignement Mathématique
Band: 22 (1976)
Heft: 1-2: L'ENSEIGNEMENT MATHÉMATIQUE

Artikel: FINITE GEOMETRIES IN THE THEORY OF THETA CHARACTERISTICS
Autor: Rivano, Neantro Saavedra
Kapitel: INTRODUCTION
DOI: <https://doi.org/10.5169/seals-48185>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 05.04.2026

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

FINITE GEOMETRIES IN THE THEORY OF THETA CHARACTERISTICS

by Neantro SAAVEDRA RIVANO

INTRODUCTION

The aim of this paper is to call attention upon the existence of a very simple “finite geometry” on the set of either odd or even theta characteristics (on an algebraic curve), and to develop on some of its properties and related concepts. In particular, this finite geometry allows one to place in a general context the classical theory of the 28 bitangents to a plane quartic (cf. Weber [6]).

Part I of the paper recalls the several interpretations and definitions of theta characteristics, and contains some examples to motivate the abstract developments in Part II. In this later part, the finite geometry is defined and its properties discussed. The main result is theorem II 2.6. Proposition II 4.4 is also of important practical value.

It is my feeling that the finite geometries will be of help in studying such problems as: relations between theta functions, filtrations in the space of moduli of level two structures over curves of a given genus, degeneration of algebraic curves. A sequel to this paper should contain applications to these subjects.

I am heavily indebted to Herbert Clemens for his continuous support during the preparation of this work, and also to Pierre Cartier for several helpful conversations. Moreover, I owe thanks to the Institute for Advanced Study for a very opportune grant, to Columbia University for its hospitality and to the Guggenheim Foundation for financial support.

I. THETA CHARACTERISTICS ON AN ALGEBRAIC CURVE

§ 0 REVIEW: QUADRATIC FORMS IN CHARACTERISTIC 2

In this section, a number of well-known results on quadratic forms in characteristic two are recalled.