A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 21. September 2018, 13:00 Uhr

Ort: Hörsaal 001
Arnimallee 3-5, 14195 Berlin

Disputation über die Doktorarbeit von

Frau Efstathia Katsigianni

Thema der Dissertation:
Rank 1 isocrystals on simply connected varieties and their moduli

Thema der Disputation
Applications of arithmetic geometry in cryptography

Die Arbeit wurde unter der Betreuung von **Prof. Dr. Dr. h.c. mult. H. Esnault** durchgeführt.

Abstract:
The study of objects such as abelian varieties and algebraic curves over finite fields has gained a lot of interest during the last years, even outside the community of algebraic geometers, due to their relevance in cryptography. Cryptography studies ways for successfully transmitting a message with secrecy or for keeping data hidden. It is becoming even more relevant as people nowadays use the Internet for a growing number of applications and the need to save or send well encrypted data is growing. Arithmetic geometry and especially abelian varieties have found astonishing applications in the area of cryptography and are being used extensively for basic operations our computers do every day. In this talk, we introduce the basics of some public key cryptographic methods, like RSA and Diffie-Hellman Key Exchange and present how and why elliptic curves are used to improve security of these methods. We discuss some specific cases and, if time permits, how curves of higher genus can be similarly used.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Die Vorsitzende der Promotionskommission
Prof. Dr. Dr. h.c. mult. H. Esnault