



UNIVERSITÀ
DI TRENTO

Dipartimento di
Matematica

DOTTORATO



Wednesday 20 July 2022 – at 3.00 pm
Seminar Room “-1” – Department of Mathematics

The seminar will take place in presence and online, through the ZOOM platform.
To get the access codes please contact the secretary office

Giulia Cavicchioni

PhD Student in Mathematics

Dirichlet L-series, the Generalized Riemann Hypothesis and its consequences

Abstract:

The Riemann zeta function, whose non-trivial zeros are related to the distribution of primes, plays a crucial role in Analytic Number Theory. Riemann conjectured that the non-trivial zeros of the zeta have real parts equal to $\frac{1}{2}$. This conjecture, the Riemann hypothesis, is considered to be one of the most important unsolved problems in mathematics. However, many generalizations of the Riemann zeta function, such as the Dirichlet L-functions, are known. In this talk, after having introduced the Dirichlet character, we will investigate some properties of the Dirichlet L-functions. We will study the distribution of the zeros of the L-functions, yielding a generalization of the Riemann hypothesis. The Generalized Riemann hypothesis conjectures that all the non-trivial zeros of the Dirichlet L-functions have real parts equal to $\frac{1}{2}$. Finally we will discuss some consequences of the Generalized Riemann Hypothesis, such as a strengthening of the Prime Number Theorem, and Goldbach weak conjecture.

Contact person: Giordano Santilli

The seminar corresponds to the final exam of Selected Topics in Number Theory for Advanced Cryptography, a planned course within Giulia Cavicchioni's first year PHD study programme

CONTATTI

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