## INSALATE DI MATEMATICA

## presents

## 11/01/2023 BIANCA MARCHIONNA

Universität Bielefeld & Università degli Studi di Milano-Bicocca An introduction to zeta functions



## Abstract:

A zeta function is a function in the complex variable s defined by a Dirichlet series  $\sum_{n=1}^{+\infty} a_n n^{-s}$ . The first example has been the Riemann zeta function, a kind of prototype for the whole theory. More examples can be generated whenever the  $a_n$ 's count prescribed subobjects of a given structure (e.g., subgroups of index n in a group, loops of length n in a graph ...).

The seminar aims at giving an overview on the world of zeta functions and on some of the most common methods used wherein, with a particular emphasis on Group Theory. After a brief introduction on Dirichlet series, the discussion will vary from classical results to more recent developments and works in progress.

**Keywords:** asymptotic algebra · Dirichlet series · group theory · zeta functions

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U5-2109 5:00 pm (CET)

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"Obvious" is the most dangerous word in mathematics. (Eric Temple Bell)