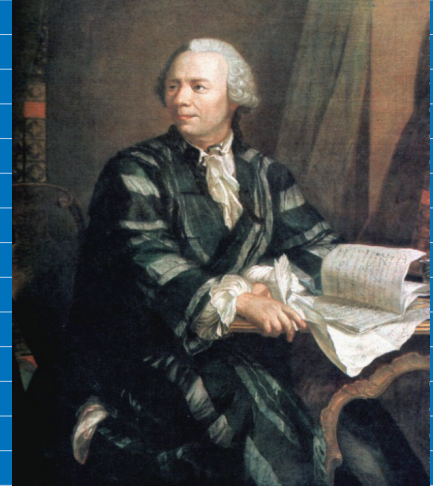**Berlin Mathematical School**

## BMS Fridays Colloquium

Friday, 8 May 2009, 2:00 pm

*Tea before the lecture starts at 1 pm*

BMS Loft, Urania
An der Urania 17, 10787 Berlin

Leonard Euler 1707-1783

## Benedict Gross (Harvard):

"Values of zeta functions at negative integers and the dimensions of spaces of modular forms"

$$\zeta(s) = \sum_{i=1}^{n} \frac{1}{n^s} = 1 + \frac{1}{2^s} + \frac{1}{3^s} + \frac{1}{4^s} + \frac{1}{5^s} + ...$$

Euler introduced the zeta function into number theory, and proved a number of beautiful results on its values at negative integers, using clever techniques to sum divergent series.

Benedict Gross reviews his methods, and discusses some more recent results on the rationality and integrality of zeta values for number fields and function fields. He will then relate these values to the dimensions of spaces of modular forms.

Jürg Kramer, Humboldt-Universität zu Berlin
Christof Schütte, Freie Universität Berlin
Günter M. Ziegler, Technische Universität Berlin
http://www.math-berlin.de