Adam Mickiewicz University
Faculty of Mathematics and Computer Science

Geometry and Topology Seminar

2 pm, Wednesday, Nov 18, 2015
A1-33, Collegium Mathematicum

Speaker: Piotr Sułkowski (Caltech, Warsaw University)

Title: **Knots and quantum physics — from geometry and topology to number theory**

Abstract:

Interactions between knot theory, quantum field theory, and string theory have always been very fruitful, and various ideas in physics often led to important results in knot theory. Examples of such results include reformulation of knot polynomials as quantum correlators in Chern-Simons theory, a discovery of integral Ooguri-Vafa invariants, or identification of homological knots invariants with spaces of BPS states in string theory. In this talk, after reviewing a web of these relations, I will present some new result and show that knot invariants, after string theory reformulation, lead to intriguing statements in number theory.