

New results on asymptotics and inequalities for partition functions

11.03**Alexandru Ciolan***(Mathematical Institute, University of Cologne, Germany)***Time:** Monday 22.07., 11:30 - 12:00, Room HS 4

Abstract: We present some recent results on asymptotics and inequalities for (over)partitions. In the first part of this talk we prove a conjecture by Bringmann and Mahlburg (2012), which says that a large enough number n has more partitions into squares with an even number of parts than with an odd number of parts if n is even, and conversely if n is odd. In the second part we compute asymptotics for $\overline{N}(a, c, n)$, the number of overpartitions of n with a number of parts congruent to a modulo c and use these asymptotics to prove some inequalities on overpartition ranks conjectured by Ji, Zhang and Zhao (2018), and Wei and Zhang (2018).