Online Number Theory Seminar

13 May 2022. – 17:00-17:50

Szabolcs Tengely: Identities for integer partitions

Identities for integer partitions have been linked to many different areas like knot theory, modular forms, statistical mechanics and transcendental number theory. There are many nice classical identities obtained by Euler, Jacobi, Gauss, Weierstrass, Sylvester, MacMahon and Ramanujan. A related question is whether given partition function takes values in a given infinite set (e.g. polynomial values for a fixed polynomial). If the polynomial is linear, then we enter the realm of partition congruences, like Ramanujan's congruences. In this direction Nicolas, Ruzsa and Sárközy and later Ono obtained nice statements. In this talk we present some results related to equations of the form $P_A(x) = P_B(y)$, where A, B are certain finite sets and $P_A(n)$ denotes the number of partitions of an integer n into parts from the set A.
The presented results are joint with **M. Ulas**.