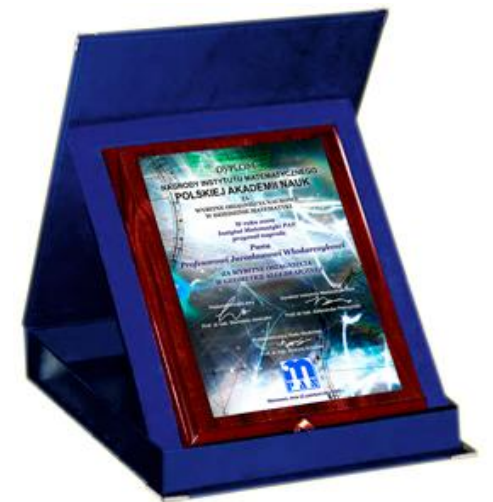


# The Institute of Mathematics of the Polish Academy of Sciences Award for outstanding scientific achievements in Mathematics



We have the pleasure of inviting you to the ceremony of granting the IMPAN Scientific Award which will be held **on 21 October 2021 at 2:30 p.m. in room 409**. For year 2020 awardee is **dr. Damian Osajda**. **At 3 p.m. in room 321** the laureate will deliver a lecture:

## *Around the Tits Alternative for nonpositively curved groups*

**Abstract:** *In 1972 Jacques Tits proved that every finitely generated linear group is either virtually solvable or contains a nonabelian free group. It is widely believed that groups acting geometrically on nonpositively curved spaces behave similarly, that is, they satisfy the Tits Alternative: every finitely generated subgroup is either virtually solvable or contains a nonabelian free group. Intuitively, this means that every such subgroup is either (respectively) reasonably small or very large. I will present my recent work on that question. In particular I will discuss a related problem concerning locally elliptic actions (every element fixes a point) on nonpositively curved spaces. An example, which can be thought of as the first step towards the Tits Alternative is the question of fixed points for actions of finitely generated torsion groups. Such problems arise naturally in various areas: Kazhdan's property (T) can be reformulated as the question on fixed points in actions on the Hilbert space; regularizability and linearizability of subgroups of the group of birational transformations of projective surfaces and of some groups of automorphisms from algebraic geometry have a similar interpretation. The talk is based on joint works with Thomas Haettel, Sergey Norin, and Piotr Przytycki.*