

**Title:** On the Finitistic Dimension Conjecture

**Abstract:** Given a ring, a basic question is what the modules (also known as representations) over the ring look like. Here we restrict to the cases of (1) commutative noetherian rings (typical examples are coordinate rings of algebraic varieties or the rings of integers of number fields) and of (2) finite dimensional algebras over a field. Homological algebra provides a powerful toolbox for studying the structure of modules and it is a basic question what homological dimensions modules can attain. The Finitistic Dimension Conjecture, going back to the 1960's, says that for each ring belonging to one of the two classes mentioned above, the projective dimension of a module can only have finitely many values.

Whereas in the commutative noetherian case the problem is well understood and the conjecture is false, in the situation of finite dimensional algebras the problem resists for more than half a century despite numerous efforts to solve it. In the first part of the talk, I will explain the conjecture along with some important results, while in the second part I will focus on recent contributions.