

Marcelo Lanzilotta, Universidad de la Republica, Montevideo, Uruguay

The Igusa-Todorov Function as a Tool of Work

It was conjectured by H. Bass in the 60's that the finitistic dimension $\text{fin.dim}(R)$ of an artin algebra has to be finite. Since then, much work has been done towards the proof of this conjecture. Recently, K. Igusa and G. Todorov defined in the paper "On the finitistic global dimension conjecture for artin algebras", a function $\Psi: \text{mod}R \rightarrow \mathbb{N}$, which turned out to be useful to prove that $\text{fin.dim}(R)$ is finite for some classes of algebras.

In this talk, we show some new properties of the Igusa-Todorov function and we apply them to prove the finitistic dimension conjecture for a large family of algebras (see Octavio Mendoza abstract). Also, we will concentrate on I-T function and we try to give a new shape of this function by showing it as a new powerful tool. As an application, we prove that the Ψ -dimension of an algebra R (a new natural dimension) is zero if and only if R is selfinjective.