



Series of conferences on **Advances in Representation Theory of Algebras (ARTA)**
Guanajuato-Toruñ-Montréal
Guanajuato, Mexico. June 22-26, 2015.

NAME: Sonia Trepode

INSTITUTION AFILIATION: Universidad Nacional de Mar del Plata

TITLE: The Representation Dimension of Selfinjective Algebras of Euclidean type.

ABSTRACT: This is a joint work with Ibrahim Assem and Andrzej Skowronski

The concept of representation dimension for artin algebras was introduced by Auslander around 1970. He expected that this notion would give a reasonable way of measuring how far an algebra is from being representation-finite. It was shown by Auslander that an algebra is representation-finite if and only if its representation dimension is equal to two. Later, Iyama proved that the representation dimension of an algebra is always finite. The interest in the representation dimension revived when Igusa and Todorov showed that the representation dimension is related to the finitistic dimension conjecture. They proved that if an algebra has representation dimension at most three, then its finitistic dimension is finite. Later, Rouquier has constructed examples of algebras with arbitrarily large representation dimension. All these examples correspond to wild algebras. Since, according to Auslander, the representation dimension should measure the distance to representation-finite, one would expect that tame algebras should have small representation dimension. Now, one of the exciting open problems is to show that all algebras of tame representation type have representation dimension at most three. In this talk we prove that the representation dimension of selfinjective algebras of euclidean type is less than or equal to three. We construct explicitly an Auslander generator.