Title: Cluster Algebras

Abstract:

Cluster algebras were introduced by Fomin and Zelevinsky in 2001, in order to study the dual canonical basis of a quantum group. The theory of cluster algebras has many connections and applications in many different areas, namely the representation theory of algebras.

In this seminar it will be given a brief exposition of the basic concepts and properties of cluster algebras, with emphasis on the description of cluster algebras of type A in terms of triangulations of a regular polygon and the set of almost positive roots in the root system of type A. It will also be presented the connection between cluster algebras and representation theory given by Caldero, Chapoton and Schiffler [CaChS], which provides a graphical description of the module category of a cluster algebra of type A.

[CaChS] Caldero, P.; Chapoton, F.; Schiffler, R., Quivers with relations arising from clusters (A_n case), *Trans. Amer. Math. Soc.*, **358**, (2006), 1347–1364.