SPEAKER: Dan Popovici (Paul Sabatier University - Toulouse III)

DATE & VENUE:
- Tuesday, January 21, 2020 // 10:00 - 12:00. Aula 520, Módulo 17, Departamento de Matemáticas, UAM
- Thursday, January 23, 2020 // 10:00 - 12:00. Aula Naranja, ICMAT

ABSTRACT: We will first explain a new approach to the Mirror Symmetry Conjecture, extended to the possibly non-Kähler context, that we proposed in 2017. It relies on the notion of Gauduchon cone, defined as the open convex cone consisting of the Aeppli cohomology classes of the $(n-1)$st powers of all the Gauduchon metrics supported by a given $n$-dimensional compact complex manifold. One of the main ideas is the notion of ‘essential deformations’ of a given such manifold.

We will then explain our adaptation to the context of complex structures of the notion of ‘adiabatic limit’ from the theory of foliations and its relation to the Frölicher spectral sequence of a given compact complex manifold.

We will then go on to present our 2019 proof of the fact, conjectured in the 1970s, that every deformation limit of Moishezon manifolds (i.e. those compact complex manifolds that are bimeromorphically equivalent to projective manifolds) is again Moishezon.

Finally, we will present the main ideas and results that we obtained very recently in joint work with J. Stelzig and L. Ugarte about a higher-page Hodge Theory and the new class of page-$\partial\bar{\partial}$-manifolds that we introduced therein.