Journée scientifique du 20 juin 2023

Lectures will take place in the Pellos lecture room, on the 2nd floor of the 1R2 building.

- *9 :30 am - 10 :30 am* : **Anna Fino** (Università di Torino)

Canonical metrics in Complex Geometry

An important tool to study complex non Kähler manifolds is to look for "canonical metrics", where the word canonical is referred to some special properties of the associated fundamental form. A Hermitian metric on a complex manifold is called pluriclosed if the torsion of the associated Bismut connection is closed and it is called balanced if its fundamental form is co-closed. In the talk I will focus on pluriclosed and balanced metrics, showing some general results and new constructions of compact non-Kähler manifolds. In particular, we will see how pluriclosed metrics lie halfway between generalized Hermitian and generalized Kähler structures.

- *10 :50 am - 11 :50 am* : **Matei Toma** (Université de Lorraine)

Bounded sets of coherent sheaves on complex spaces

We present the notion of boundedness for sets of isomorphism classes of coherent sheaves on (relative) complex spaces, a boundedness criterion and applications to properness properties of the Douady space and to families of semistable sheaves such as the existence of a relative Harder-Narasimhan filtration.

- *2 pm - 3 pm* : **Tristan C. Collins** (Massachusetts Institute of Technology)

Calabi-Yau metrics in the complement of two divisors

Let X be a smooth Fano variety and D be a simple normal crossings anti-canonical divisor with two components. I will describe the construction of a complete Calabi-Yau metric in $X \setminus D$, and explain an approach to the general case when D has an arbitrary number of components. This is joint work with Y. Li.