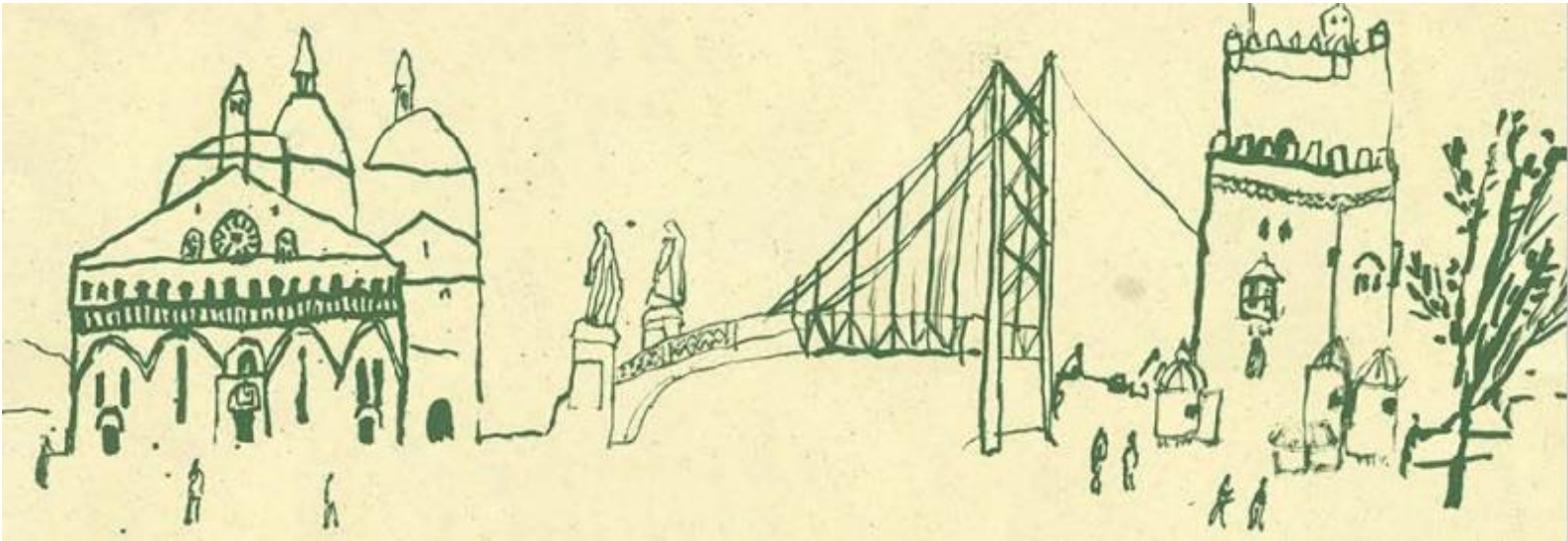# Short course

by LUISA FIOROT (Dipartimento di Matematica "Tullio Levi-Civita", Padova, Italy)

Derived categories in Algebraic Geometry and Representation Theory

FACULDADE DE CIÊNCIAS, UNIVERSIDADE DE LISBOA, Portugal

15th June 2023

Introduction to derived categories: abelian categories, functors, natural transformations, triangulated categories, category up to homotopy and derived category. Examples.

16th June 2023

Examples of abelian categories: coherent and quasi-coherent sheaves on a separated quasi compact scheme. Coherent sheaves on a complex manifold. Category of modules on a ring.

19th June 2023

Derived functors. Cohomology of sheaves. Derived direct image and inverse image of quasi-coherent sheaves and their adjunction formula.

20th June 2023

Torsion pairs in abelian categories and t-structures in triangulated categories. Examples.

21st June 2023

Beilinson theorem: equivalence of the derived category of coherent sheaves on the projective line and the derived category of representations of the Kronecker quiver.

room 6.2.38 @ 2:00 p.m.