

Docente: Michael McQuillan

Titolo: **Resolution of singularities**

Inizio: Novembre

Programma

The goal of the course will be resolution of singularities of excellent algebraic spaces in characteristic 0. However, as far as I can, I'll try to keep things characteristic free.

As such, the programme will be:

- 1) Resolution of complete local rings in characteristic zero.
- 2) Unipotent groups in arbitrary characteristic.
- 3) Resolution of complete local rings of small dimension in arbitrary characteristic.
- 4) How, independently of the characteristic, to go from complete local rings to excellent algebraic spaces.

Items (1), (2) & (3) are linear algebra, albeit some knowledge of Lie algebraic groups and their Lie algebras would be helpful. I will, however, aim to cover some background about excellent rings, with a view to explaining why the study of any other kind of rings is an invitation to pathology.