

Prospective for sub-mm, mm and radio astronomy

GECO day

June 2016

Science

- **Interstellar medium of the MW**
 - Star forming region and molecular clouds
 - Formation of massive stars from cores, HII regions
 - Dust continuum (temperature, mass), molecular lines, free-free emission
- **Galaxies from low to high redshift**
 - Disc, bar and bulge of the MW
 - Dynamics
 - Dusty star formation, dust mass
 - Gas content (CO, CII, HI)
- **Reionisation**
 - Dusty star formation, CII line, neutral gas, synchrotron
 - $z > 6$ galaxies and power spectra (Intensity Mapping with CII and HI)
- **Galaxy clusters**
 - Star formation, quenching
 - SZ: tSZ + kSZ
- **Dark matter (HI)**
- **The Cosmological model (CMB)**

Landscape

- From 350 microns to 3 mm:
 - *Ground:*
 - Single dishes:
 - 30m / NIKA2
 - Concerto / LLAMA-APEX
 - 10-m Terahertz Telescope (Dome C)
 - Interferometers:
 - ALMA
 - NOEMA
 - *Space:*
 - PIXIE (NASA Explorer), COrE (M5)
 - SPICA (M5) but SMI only?
- Radio:
 - SKA and its precursors and pathfinders

Prospective for sub-mm, mm and radio astronomy

- Sub-mm and mm:
 - Missing NOEMA / ALMA « technical » expertise
 - NIKA2: pipeline and archives?
 - Contributions to the 10-m Terahertz Telescope?
 - Instrumental contribution (CORe? Concerto? SPICA-MSI?)
 - SO IRAM?
- Radio:
 - Missing « technical » expertise (how to observe, pipeline)
 - Only Albert in SWG of SKA-1, only Albert and Alessandro on Precursors
 - Want to participate to Precursors (MeerKAT and ASKAP)?
 - Conference SKA in India (the SKA-France committee strongly encourages a massive participation)?
 - SO SKA in collaboration with OCA?