

# **MadMax Mini Workshop**

**Monday, 21 November 2016 - Tuesday, 22 November 2016**

## **Scientific Programme**

**Topics:**

**Theory-Motivation:**

- The case for axions- motivation
- Axion scenarios: pre inflation, post inflation
- Decay of strings and domain walls: uncertainties on DM axion mass region
- Axion clustering: Influence on the signal rate
- Dielectric haloscope: the basic concept
- Open issues

**Experiment:**

- Axion search landscape, complementarity of MadMax with other existing projects
- What has been done so far:
  - \* The Cluster seed project: Hardware
  - \* Resonator response (transmission and reflection behavior)
  - \* The receiver 10GHz-40GHz and DAQ: First measurements of fake axion and noise
  - \* Disc tiling
  - \* Magnet design Saclay
  - \* Magnet design Berkeley
- Cryogenic issues: Interfaces resonator, receiver, magnet?
- Algorithm to place discs
- Sensitivity estimation
- Optimal running plan

**What needs to be done:**

- Project planning: work packages, interfaces, time schedules
- Magnet: design study and innovative partnership
- Concepts for resonator

- Concepts for tiling
- concept for detectors
- antennas and mirrors
- Algorithm to place discs

**<u>Collaboration forming: </u>**

- Interest of institutes, possible commitment, facilities, man power, budget
- Site considerations, candidates
- Name of the project