MadMax Mini Workshop

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

Scientific Program

Topics:

<u>**Theory-Motivation:** </u>

-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

<u>**Experiment:**</u>

- 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

<u>**What needs to be done:**</u>

- 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 committment, facilities, man power, budget
- Site considerations, candidates
- Name of the project