

Proposal to join the RD-51 collaboration:
Sapienza Università and INFN - Roma

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Presentation of the group

- Our group is a “sub-group” of the **ATLAS-Roma1** group. We have been involved in the ATLAS experiment since the beginning and we participated to the project and realisation of the ATLAS **muon spectrometer** mainly in two sectors:
 - Construction of a part of the **MDT** precision chambers;
 - Project and realisation of the **muon trigger** system.
- Now we are strongly involved in detector operation and in data analysis. In the last year we started to join the **muon spectrometer phase-1 upgrade** project (**New Small Wheel**) studying the *MicroMega* chambers.

Our activities on MicroMegas in 2012

- We joined the “**MAMMA**” collaboration on January 2012. We participated to the **test-beams** at CERN and at LNF along the year and contributed to the data analysis particularly in two items (for both items see K.Ntekas presentation yesterday):
 - study of the “**microTPC**” mode operation;
 - study of the dependence of the MM response in **magnetic field**.
- We also started to prepare the mechanical set-up in our workshop in view of mechanical tests

Plan of activities in next years

- Continuation of tests and analysis for **detector debug and comprehension**: test-beam, cosmic-ray stand,...
- Contribution to the definition of the assembly procedure:
 - choice of panel materials;
 - glueing procedure;
 - mechanical qualification of the chambers (planarity, strip positioning,...).
- The first goals are:
 - mechanical “mock-up” test;
 - module-0 construction.

All activities done in collaboration with INFN MM community within the MAMMA collaboration.

Conclusions

- The ATLAS upgrade effort will give an important contribution for the development and consolidation of the MicroMega technology, as a unique detector for precision space measurements over large areas in a high radiation environment.