Milano-Bicocca group: Status report

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Università e INFN Milano-Bicocca

JUNO-Italia Meeting, Roma 28-29 marzo 2023

Group members

Giovanni Baccolo	INFN-MIB	50%
Andrea Barresi	INFN-MIB	80%
Antonio Cammi	PoliMi	60%
Davide Chiesa	INFN-MIB	49%
Stefano Lorenzi	PoliMi	40%
Merli Daniele	INFN-MIB	100%
Nastasi Massimiliano	INFN-MIB	49%
Previtali Ezio	INFN-MIB	30%
Riva Stefano	PoliMi	50%
Sisti Monica [RL]	INFN-MIB	49%

Group activities

Radioactivity measurements
and
Background control coordination

AND

Reactor simulation
and
Antineutrino spectra generation

Radioactivity measurements

- Continuous control of mass production of acrylic panels for the JUNO vessel using the Neutron Activation Analysis (NAA) technique: certification of the bulk radiopurity and, to a lesser extent, of the surface radiopurity.
- Developed a measurement protocol for the certification of the JUNO liquid scintillator radiopurity at 10^{-15} g/g sensitivity for Uranium, Torium and Potassium.
- Radiopurity measurements on PPO and bis-MSB samples using gamma spectroscopy and NAA.

Background control

- Coordination of the background-related activities at collaboration level (mainly related to acrylic production, cleanliness).

- On-site background control during detector construction

Antineutrino spectra generation

- PWR nuclear reactor simulations to determine fission rates and their uncertainty as a function of time and depending on reactor boundary conditions (temperature and power distributions).
- Antineutrino spectra generation with “ab initio” calculations.
- Main purpose: benchmark the simulation results with TAO data.

Situazione finanziaria 2023

Assegnazioni

Missioni: 13 k€

7k meeting coll. Cina; 4k missioni sito Cina;

0k meeting Europa; 0k meeting Italia; 2k missioni PV.

Consumo: 10 k€

3k scintillatore liquido; 2k resine scambio ionico;

2k consumabili per laboratori (materiale clean room, contenitori monouso radiochimica e basso fondo);

2k acidi ultra-puri radiochimica.

Altro Consumo e Altri Servizi: 18 k€

8k+4k SJ per utilizzo reattore PV;

4k per LN2.

Inventario: 2 k€

Trasporti: 2 k€

TOTALE: 38k€ + 4 k€ SJ

Richieste

Missioni: 18 k€ + 16k€ SJ

16k SJ meeting coll. Cina; 7k missioni sito Cina;

6k meeting Europa; 3k meeting Italia; 2k missioni PV.

Consumo: 13 k€

4k scintillatore liquido; 2k resine scambio ionico;

4k consumabili per laboratori (materiale clean room, contenitori monouso radiochimica e basso fondo);

3k acidi ultra-puri radiochimica.

Altro Consumo e Altri Servizi: 17 k€ + 4 k€ SJ

12k + 4k SJ per utilizzo reattore PV;

5k per LN2 (funzionamento HPGe)

Inventario: 2 k€ PMT a basso fondo e alta efficienza

Trasporti: 2 k€

TOTALE: 52 k€ + 20 k€ SJ