

FOOT paper for Frontiers in Physics

Special Issue on Applied Physics at Future accelerators

Paper info - 1

- Abstract sent by Giuseppe → accepted
- Title: “Measuring the impact of Nuclear Interaction in Particle Therapy and in Radio Protection in Space: the FOOT experiment”
- **Deadline for submission: 31/05**
- We can exploit this opportunity to have a general FOOT paper as a reference for future papers/proceedings/conferences
- Due to the narrow time window I’ve been charged to write a first draft of the paper
- The idea is to have this first draft in few days ready and then to share the draft with the “experts” (detector/DAQ/preformance studies) and to have a feedback/help/rewriting in one week – 10 days
- Finally share the final draft modified by experts with the whole collaboration hopefully at least one week in advance wrt 31/05

Paper info - 1

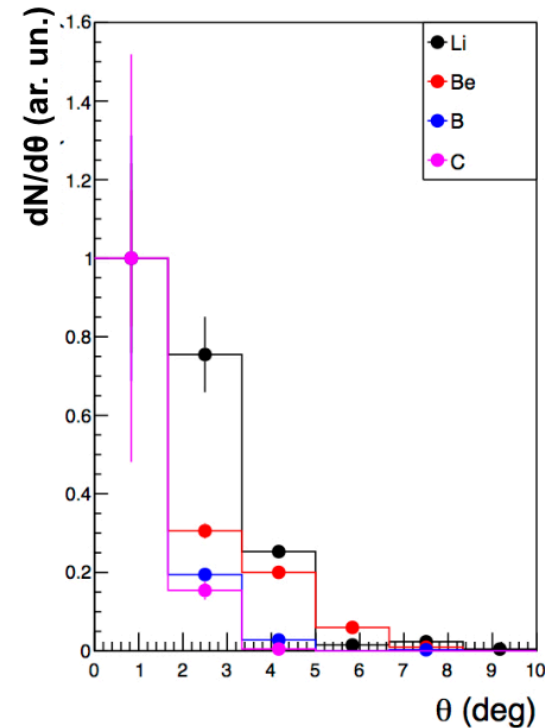
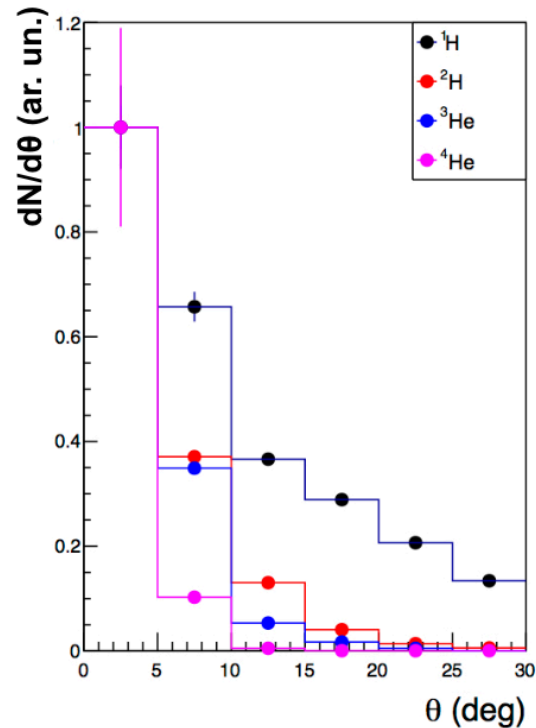
- Target: 15-20 pag with introduction (2 pag), FOOT goals (2 pag), description of setup, detectors and DAQ (~10-12 pag), expected performances (~3 pag)
- General description of goals, detector and expected (MC) performances from CDR+updates (slides, papers and proceedings available).
- No (or reduced) calibration/data taking measurements
- Performance plots and measurements (from data taking/calibrations) will be published in dedicated papers (as already done for ToF detector)

Paper info - 2

- Title and Abstract sent by Giuseppe
- Title: “Measuring the impact of Nuclear Interaction in Particle Therapy and in Radio Protection in Space: the FOOT experiment”
- Intro: I’ve tried to share same importance to the goal measurements (PT and space proj fragmentation and PT target fragmentation).
 - Table with different proj + target + energy for different application
- FOOT goals->here I’ve stressed that target fragm. is the one that asks for more stringent requirements on FOOT performances.

Paper info - 3

- FOOT setup: Detector layout. Upstream region followed by two different setup frag measurements (magnetic and emulsion spectrometers)



Paper info - 4

- Detector description, avoiding to show performances/detector plots, unless necessary for explain expected performances → postponed to dedicated papers
 - Ask to detector expert to check/help/rewrite as soon as a draft is ready
- General info about DAQ
 - Ask feedback/help from Bologna group
- Emulsion detector
 - Ask feedback/help from Napoli group

Paper info - performances

- Performances electronic setup:
 - General fit strategy to identify fragments
 - Charge fragmentation?
 - Study of mass resolution as a function of p , E_{kin} and Tof resolution
 - →ask help feedback Roberto, Sofia and...
- Performances emulsion setup:
 - Ask feedback/help from Napoli group

