

# HASPIDE



**3<sup>rd</sup> Meeting 2022-05-24**

<https://https://agenda.infn.it/event/31555/>

*L. Servoli*



# General Communications



1) The presentation to the ASI workshop went well.

We have been cited in the final recap of the sessions:



Workshop ASI - Topics and science goals for future space science programs 20-22 April 2022  
Heliophysics and Space Weather session – Preliminary Concluding Remarks

## Proposed experiments and R&D ideas

### Solar observations

- Development of a new family of photoelectric and Compton X-ray polarimeters to study the **magnetic reconnection** and **particle acceleration** on the Sun.
- Development of a new **internally-occulted coronagraph** for **H I Lyman- $\alpha$  spectral line** (121.6 nm) to be deployed to the International Space Station.
- Development of a **Coronagraph Magnetograph** to map the vector magnetic field and line-of-sight and plane-of-the-sky velocities of the very dynamic inner corona at unprecedented spatial and temporal resolutions.
- Development of a **miniaturized Gamma and X-ray instrument** for solar flux monitoring
- Development of a **miniaturized UV-imager** to map the radiative emission of the Sun

### Environment observations

- Development/upgrade of **charged particle detectors** for deep space and interplanetary missions based on the use of a **modular magnetic spectrometer**.
- Development of a new type of detector for measuring the Solar Energetic Particle events based on **hydrogenated amorphous silicon substrate**.
- Development/upgrade of **ENA sensors** to globally view the ring current and shock-front population dynamics, especially during Space Weather events
- Development of **Ion Mass Spectrometer** for plasma measurements and **Particle Processing Unit**

Supporto Sale

Most of the proposed payloads have a high TRL planned to be increased in a reasonable timeline varying between 1 and 3 years approximately (TBC)

*Catia and myself have started writing a paper on the proposed SEP a-Si:H measurement device.*



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2) *Two abstracts have been submitted to the 108° Meeting of Società Italiana di Fisica.*

→ *First results with Hydrogenated Amorphous Silicon devices to detect ionizing radiation fluxes. (L. Servoli)*

*Section 6: Fisica applicata, acceleratori e beni culturali*

→ *Use of a-Si:H detectors in medical physics application (C. Talamonti)*

*Section 5: Biofisica e fisica medica*

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- 3) *Two abstracts also submitted to IEEE/NSS/MIC conference*
  - *Development of thin hydrogenated amorphous silicon detectors on a flexible substrate (M. Menichelli)*
  - *Spectroscopic characterization of defects induced by irradiation in hydrogenated amorphous silicon detectors (F. Peverini, M. Pedio)*
  
- 4) *An extended paper on results of spectroscopic tests will be prepared by Francesca and Maddalena in june. (see WP1)  
To be discussed about possibility to go in high IF journal and to be an Open Access paper (money request to CSN5).*



# General Communications

- 5) *WP4. The CNS5 has unblocked 5 k€ for phantom construction requested by FI to prepare the autumn testing activity.*
- 6) *WP5: An ASI call to which we could apply is scheduled for the end of the year. We will evaluate it and eventually apply.*
- 7) *If there are 2022 financial requests to CSN5 for the next meeting (july) lets prepare them in the coming weeks.*
  - *travel money for conferences;*
  - *money for open access publications.*

# General Communications



8) We are preparing two calls for access to proton beams:

- Use of proton beam at Adrotherapy Trento Center (70 to 228 MeV with possibility to downgrade down to 20 MeV)
- Use of Basel (S. Braccini) proton beam (up to 15 MeV)

Goal is to have measurements for the WP5 SEPs programme also to strengthen the participation to the ASI call of end 2022 and possibly to write a complete paper over most of the energy range up to 450 MeV.

9) A further session at Lecce Proton beam 3 MeV will be planned before end of 2022.

# General Communications



10) *In Perugia we applied for a grant for a PhD position in the framework of the new batch of PNRR funds.*

*We did not succeed, but we know that more funds on same source and different application schemes will appear from now to the end of the year.*

11) *We have to start preparing for the next years financial request. I would like to receive a plan by mid june from all the Wps, detailed for all Research Units. Final discussion will be at the next General Meeting in june.*

***Remark: request for PostDoc (AdR) should be well prepared.***