

AHEAD bkg Workshop Program

(in bold the invited speakers)

Day 1: 28th, November, 2016 → [14:30 - 18:30]

Welcome by INAF/IAPS Roma director (F. Capaccioni) [20']

L. Natalucci (INAF/IAPS Roma), "Opportunities for the high energy astrophysics community by the AHEAD European Infrastructure Project" [20']

Claudio Macculi (INAF/IAPS Roma), "Introduction" [15']

(55' + 15' questions)

→ **Plasma physics (particle environment) (chair: C. Macculi) (85' + 25' questions)**

- Monica Laurenza (INAF/IAPS Roma), "The energetic particle environment in the interplanetary space" [20']

16:10-16:30 coffee break

- Dusan Budjas (ESA/ESTEC), "Soft proton fluxes in and around Earth's distant magnetotail" [20']
- Ricardo Perez-Martinez (XMM-Newton SOC / ISDEFE), "Modelling the radiation environment of XMM-Newton" [15']
- Simona Ghizzardi (INAF/IASF Milano), "Impact of the magnetospheric environment on the XMM-Newton background" [15']
- Teresa Mineo, (INAF/IASF Palermo), "A proton response matrix for XMM-Newton" [15']

Day 2: 29th, November, 2016 → [9:15 – 19:00]

Background effects on science data from high energy missions to microwaves (chair: N. Meidinger) (165' + 50' questions)

- Silvano Molendi (INAF/IASF Milano), "The role of the background in past and future X-ray missions" [20']
- Caroline Kilbourne (NASA GSFC), "The In-orbit Background of the Hitomi SXS" [20']
- Francesco Piacentini (Sapienza -Università di Roma), "Characterization and physical origin of energetic particles on Planck HFI." [20']
- Iacopo Bartalucci (CEA Saclay - DSM - IRFU - Service d'Astrophysique), "Particle background impact on current X-ray missions and future prospects" [15']

11:00-11:20 coffee break

- Martino Marelli (INAF/IASF Milano), "Extraction and analysis of the XMM-Newton Soft Proton Background" [15']
- David Salvetti, (INAF/IASF Milano), "Characterizing the XMM-Newton EPIC Particle Background" [15']
- Fabio Gastaldello (INAF/IASF Milano), "The origin of XMM unfocused and focused particle backgrounds" [15']

- Ignacio de la Calle (ESAC, Madrid, Spain), “The XMM-Newton Background”. [15’]

13:00-14:00 Lunch

- Michael Freyberg (MPE Garching, Germany), “Background: from XMM-Newton to eROSITA”. [15’]
- Christian Kirsch (Univ. of Erlangen-Nuremberg - Astronomical Institute), “The Athena end-to-end simulator” [15’]

→ Radiation Damage (from high energy missions to microwaves to planetology probes, ...) (chair: S. Molendi) (40’ + 10’ questions)

- Norbert Meidinger (Max-Planck-Institut MPE), “XMM EPIC-PN, eROSITA, ATHENA-WFI cameras” [20’]
- Emanuele Perinati (IAAT), “Effects of hyper-velocity impacts” [20’]

→ Geant4-based tool for instrument modelling (chair: S. Molendi) (120’ + 35’ questions)

- Petteri Nieminen (ESA/ESTEC), “ESA programs and ongoing R&D” [20’]

16:00-16:20 coffee break

- Simone Lotti (INAF/IAPS Roma), “The particle background expected for the X-IFU instrument onboard of ATHENA.” [20’]
- Fan Lei (RadMod Research), “Collaborative Iterative Radiation Shielding Optimisation System-CIRSOS” [20’]
- Fan Lei (RadMod Research), “Is Ion LET Still Suitable for Parameterising SEE Cross-Sections of Nano-Scale Devices” [15’]
- Jonathan Keelan, (The Open University), “Validation of Geant4 simulations for instrument background modelling towards the Athena WFI” [15’]
- Emanuele Perinati (IAAT), “Background studies at IAAT” [15’]
- Pere Blay (Instituto de Astrofísica de Canarias), “Geant4 Simulations of the two detector layers in ASIM/MXGS” [15’]

19:00 Afterhour offered by AHEAD

Day 3: 30th, November, 2016 → [9:30-13:00]

Geant4 (low energy electromagnetic physics) (chair: S. Lotti) (60’ + 15’ questions)

- Vladimir Ivanchenko (CERN), “Geant4 Standard and Low Energy EM libraries for space applications” [20’]
- Alfonso Mantero (SWHARD), “The Geant4 LowEnergy Electromagnetic Physics” [20’]
- Guillaume Patanchon (APC, Paris), “Interaction of cosmic rays with Planck-HFI detectors” [20’]

11:00-11:20 coffee break

- 11:20-12:30 Round table
- 12:30-13:00 Concluding remarks (L. Piro).