



SPECIFICATION, **AN**ALYSIS & **RE**-CALIBRATION OF **HIGH** **E**NERGY **P**ARTICLE **D**ATA

SPEARHEAD

Workshop #3

Dates: 9-11 September, 2026 **Time:** 09:00-18:30

Location: Institute for Experimental and Applied Physics, University of Kiel (CAU) & Virtual (zoom)

Meeting Objectives

- A.** Present and discuss project results and impact.
- B.** User engagement, community feedback, knowledge exchange, collaboration opportunities

Day 1: 9 September, 2026 **Time:** 09:00-18:30

Time	Topic / Discussion Item	Speaker
9:00 30 min	SPEARHEAD results overview	A. Papaioannou Coordinator
9:30 30 min	SOHO/ERNE and its high-energy data products	Rami Vainio UTU
10:00 15 min	SPEARHEAD Impact - >100 MeV protons catalogue	NOA
10:15 15 min	Machine Learning Prediction of >100 MeV SEP Events Using Robust Validation and Explainable AI	E. Lavasa NOA
10:30 15 min	Discussion	
10:45 30 min	Coffee Break	
11:15 30 min	SEP and X-ray observations (I)	Alexander Warmuth AIP
11:45 15 min	SPEARHEAD Impact - Electron events catalogues (KET, EPHIN, HET)	Marlon Köberle CAU
12:00 15 min	Ulysses/KET - Simulation and analysis of solar energetic electron events	Marlon Köberle CAU
12:15 30 min	Particle transport during relativistic solar particle events: evidence from energetic electrons through direct measurements and radio emission	Ludwig Klein ObsParis, France
12:45 15 min	Discussion	
13:00-14:00 60 min	Lunch - Break	
14:00 30 min	Measurements of SEPs (1)	Ian Richardson NASA/GSFC
14:30 15 min	SPEARHEAD Impact - G4VM & Bowtie Tool	CAU
14:45 15 min	Development of a combined GOES - SOHO/EPHIN proton dataset	Henrik Dröge CAU

15:00 15 min	Reanalysis of ESA Standard Radiation Environment Monitor (SREM) measurements: Solar Energetic Particle events and Galactic Cosmic Rays	Aminalragia-Giamini Sigiava SPARC
15:15 15 min	Discussion	
15:30 15 min	Summary of SPEARHEAD Tools	George Vasalos NOA
15:45 15 min	Coffee Break	
16:00 45 min	Public outreach talk (in German)	Alexander Warmuth AIP
16:45 105 min	Fair of tools from the SPEARHEAD & SOLER projects	All
18:30	Adjourn	

Day 2: 10 September, 2026 **Time:** 09:00-18:30

Time	Topic / Discussion Item	Speaker
09:00 30 min	Particle Transport in the Heliosphere: From Theory to Space Weather Forecasting	Nicolas Wijsen KU Leuven, Belgium
09:30 15 min	SPEARHEAD Impact - VDA Tool	NOA
09:45 15 min	Inverse velocity dispersion events in multi-spacecraft analyses	Yuncong Li University of Science & Technology of China
10:00 15 min	Modelling Counterstreaming Electron Beams in Flux Rope CMEs with Varying Magnetic Twist	Myrte Flossie KU Leuven, Belgium
10:15 15 min	Discussion	
10:30 30 min	Coffee Break	

11:00 30 min	From Observations to Physical Interpretation: Tools for Analyzing Solar Energetic Particle Events	Laura Rodriguez-Garcia ESA
11:30 15 min	SPEARHEAD Impact - Solar Orbiter Catalogue & SEP-PACT Tool	NOA
11:45 15 min	Multi-spacecraft investigation of particle acceleration and transport during GLE75	Nasrin Talebpour Sheshvan IRAP
12:00 15 min	Testing REleASE for Mars Applications: Range of Validity of the Relativistic Electron Alert System for Exploration	Bernd Heber CAU
12:15 15 min	Discussion	
12:30 30 min	SPEARHEAD Consortium Board Meeting (CB Members only)	
13:00-14:00 60 min	Lunch - Break	
14:00 30 min	Observations and modeling of Forbush decreases through space- and ground-based detectors	Simone Benella INAF
14:30 15 min	SPEARHEAD Impact - FD catalogues & FDAT demo	Mateja Dumbovic OH
14:45 15 min	Measuring Forbush decreases and probing CME evolution throughout the heliosphere	Mateja Dumbovic OH
15:00 15 min	Rigidity Dependence of the Galactic Cosmic Ray Modulation Amplitude During Solar Cycles 23 and 25 Using EPHIN and AMS-02 Measurements	Lisa Romaneehseen CAU
15:15 15 min	Algorithm for real-time Forbush-decrease detections onboard spacecraft	Nicolina Chrysaphi INAF
15:30 15 min	Discussion	
15:45 15 min	Coffee Break	
16:00 30 min	Particle Acceleration	Silvia Dalla University of Lancashire, UK
16:30 15 min	SPEARHEAD Impact - GLEs analyzed in SPEARHEAD	NOA

16:45 15 min	Observations and analysis of Ground level enhancements of Solar Cycle 25	Alexander Mishev UOULU
17:00 15 min	GLE77 abundances recorded onboard SoHO, STEREO, ACE - evolution of spectra	Athanasios Kouloumvakos APL
17:15 15 min	Discussion	
17:30 60 min	Meeting with the External Advisory Committee (EAC)	
19:00	Social Dinner	

Day 3: 11 September, 2026 Time: 09:00-14:00

Time	Topic / Discussion Item	Speaker
09:00 30 min	SEP and X-ray observations (2)	Alexis Rouillard IRAP/AIP
09:30 15 min	SPEARHEAD Impact - SEPs and structures in the Interplanetary Space	Nasrin Talebpour Sheshvan IRAP
09:45 15 min	Study of CME-CME interactions, Turbulence and associated GLE #77 during the 11–12th Nov 2025 event	Harsh Bhati Netaji Subhas Univ. of Technology, India
10:00 15 min	Solar Energetic Particle Events in the Inner Heliosphere: Observations from Solar Orbiter	Manon Jarry NOA
10:15 15 min	Best Student Presentation	
10:30 15 min	Discussion	
10:45 30 min	Coffee Break	
11:15 30 min	The Heliospheric Pioneer for Solar and Interplanetary Threats Defence (HENON) mission for space weather operations and science	Monica Laurenza INAF

11:45 30 min	Open session (What comes next), Contribution of SPEARHEAD, New instrumentation, missions, AI in SEP science	Ian Richardson, NASA ; Piers Jiggins, ESA ; Giorgos Giannopoulos, NOA
12:15 45 min	Panel Discussion	
13:00-14:00 60 min	Lunch - Break	
14:00	Adjourn	
14:30	Visit to Kiel Ronne	