

MONDAY 02-Aug-2010

18:00 19:00 **Registration** (Turku City Hall)

19:00 20:30 **Welcome Reception at the Turku City Hall**

TUESDAY 03-Aug-2010

08:00 09:00 **Registration** (Educarium)

09:00 09:30 **OPENING CEREMONY**

Rector Prof. K. Virtanen: Welcome by the University of Turku; **Prof. A. Wolfendale and Prof. P. Kiraly:** Some reflections on the ECRS--and the way ahead; **Prof. E. Valtonen:** Welcome by the LOC

1A_PI: PLENARY SESSION 3 (Chair: I. Usoskin)

09:30 10:00 **Ting:** The Alpha Magnetic Spectrometer on International Space Station

10:00 10:30 **Picozza:** Understanding cosmic rays and searching for exotic sources with PAMELA

10:30 11:00 **Sasaki:** The BESS experimental astroparticle physics program

11:00 11:30 **Coffee-break**

1A_Pa1: Parallel Session 3 (Chair: E. Valtonen)

11:30 11:50 **Baldini:** Measurement of the cosmic-ray electron spectrum with the Fermi LAT (*Invited*)

11:50 12:05 **Mikhailov:** Cosmic ray electron and positron spectra measured by PAMELA

12:05 12:20 **Panov:** Possible structure of the cosmic ray electron spectrum measured by the ATIC-2 and ATIC-4 experiments

12:20 12:35 **Karelin:** High energy cosmic-ray proton and helium spectra

12:35 12:50 **Obermeier:** Measuring the B/C ratio with TRACER

12:50 13:05 **Carbone:** Observational capabilities and techniques for the study of light-nuclei in cosmic rays with the PAMELA experiment

1A_Pa2: Parallel Session 5 (Chair: R. Vainio)

11:30 11:50 **Bell:** Shocks, magnetic field and energetic particles (*Invited*)

11:50 12:10 **Wibig:** Composition of the ankle (*Invited*)

12:10 12:25 **Telezhinsky:** Exploring cosmic ray spectra in supernova remnants

12:25 12:45 **Meli:** Numerical modelling of relativistic shock acceleration (*Invited*)

12:45 13:00 **Tammi:** Particle acceleration timescales in relativistic jets

13:00 13:15 **Schlickeiser:** Ultrahighenergy galactic cosmic rays from distributed focused acceleration

13:15 13:30 **Thoudam:** On the possible correlation between the high energy electron spectrum and the cosmic-ray secondary to primary ratios

13:30 15:00 **LUNCH**

1P_PI: PLENARY SESSION 5 (Chair: R. Schlickeiser)

15:00 15:30 **Jokipii:** Magnetic-field amplification and particle acceleration at supernova shocks

15:30 16:00 **Waxman:** Particle acceleration at relativistic shocks with applications to gamma-ray bursts and UHECRs

16:00 16:30 **Bergström:** Dark matter signatures in cosmic rays

16:30 17:00 **Coffee-break**

1P_Pa1: Parallel Session 3 (Chair: M. Panasyuk)

17:00 17:15 **Wu:** Measurements of cosmic ray antiprotons with PAMELA

17:15 17:30 **Mayorov:** Globular cluster of antistars as a source of antihelium

17:30 17:45 **Mayorov:** Search for antihelium in cosmic rays in PAMELA experiment

17:45 18:00 **Muraki:** Detection of neutrons at ISS by SEDA-AP

18:00 18:15 **Spillantini:** Status and perspectives of CALET experiment on ISS

18:15 18:30 **Shchutka:** Towards the low energy cosmic ray measurement with PERDaix

18:30 18:45 **Takahashi:** Balloon-borne gamma-ray telescope with nuclear emulsion

18:45 19:00 **Suchkov:** The possibilities of simultaneous detection of gamma rays, cosmic-ray electrons and positrons on the GAMMA-400 space observatory

1P_Pa2: Parallel Session 4 (Chair: M. Giller)

17:00 17:15 **Menjo:** Energy spectra measured by a LHC forward experiment : LHCf

17:15 17:30 **Melissas:** Overview of radio-detection of cosmic ray air showers and prospects for a larger scale experiment

17:30 17:45 **Deligny:** Limits on the diffuse flux of ultra high energy neutrinos using the Pierre Auger Observatory

17:45 18:00 **Buitnik:** Constraints on ultra-high energy neutrino flux from radio observations of the Moon

18:00 18:15 **Smejkal:** ALTA/CZELTA – A Sparse Very Large Air Shower Array: overview and recent results

18:15 18:30 **Sarkamo:** Developments in shower reconstruction and composition analysis for CARPET-3 EAS array

18:30 18:45 **Iyono:** Cosmic ray primary composition studies through the Gerasimova-Zatsepin effects of heavy nuclei at LAAS

18:45 19:00 **Lauer:** Directional correlations between UHECRs and neutrinos observed with IceCube

WEDNESDAY 04-Aug-2010

2A_PI: PLENARY SESSION 2 (Chair: Y. Muraki)

09:00	09:30	Flueckiger: Terrestrial effect of cosmic rays
09:30	10:00	Muscheler: Long-term variations of galactic cosmic rays inferred from cosmogenic isotopes
10:00	10:30	Marsden: Energetic particles observation in the 3D-heliosphere - past, presence and future

10:30 11:00 **Coffee-break**

2A_Pa1: Parallel Session 2 (Chair: P. Kiraly)

11:00	11:20	Wolfendale: Cosmic rays and global warming - an update (<i>Invited</i>)
11:20	11:40	Storini: Energetic particles near Earth: relations to Space Weather studies (<i>Invited</i>)
11:40	12:00	Seppälä: Solar energetic particles and their effects on the chemistry of the middle and upper atmosphere (<i>Invited</i>)
12:00	12:15	Sloan: Atmospheric ionization - comparison of data and simulation
12:15	12:30	Muraki: Cosmic rays and the width of tree rings
12:30	12:45	Riipinen: Atmospheric data over a solar cycle: no connection between galactic cosmic rays and aerosol formation events
12:45	13:00	Kavliakov: Global hurricane activity interconnection with cosmic ray intensity changes

2A_Pa2: Parallel Session 4 (Chair: K.-H. Kampert)

11:00	11:20	Karg: The IceCube observatory: Status and initial results (<i>Invited</i>)
11:20	11:40	Margiotta: The ANTARES detector (<i>Invited</i>)
11:40	12:00	Prosin: Tunka-133: Methods of extensive air shower parameters reconstruction (<i>Invited</i>)
12:00	12:20	Surdo: Cosmic ray physics by the ARGO-YBJ experiment (<i>Invited</i>)
12:20	12:40	Bertaina: The cosmic ray energy spectrum in the range 10^{16} - 10^{18} eV measured by KASCADE-Grande (<i>Invited</i>)
12:40	13:00	Caruso: General overview of recent results from the Pierre Auger Observatory (<i>Invited</i>)

13:00 14:30 **LUNCH**

2P_PI: PLENARY SESSION 4 (Chair: T. Suomijärvi)

14:30	15:00	Kouchner: High energy neutrino astronomy
15:00	15:30	Haungs: Cosmic rays in the knee energy range
15:30	16:00	Ghia: Ultra-high energy cosmic rays

16:00 17:00 **Coffee-break and POSTER VIEWING (Sessions 3 and 5)**

2P_Pa1: Parallel Session 2 (Chair: E. Flueckiger)

17:00	17:15	Lidvansky: Strong variations of cosmic ray intensity during thunderstorms and associated pulsations of the geomagnetic field
17:15	17:30	Chilingarian: Particle fluxes from thunderstorm clouds
17:30	17:45	Calderon: Measurement of the charge ratio of atmospheric muons with the CMS detector
17:45	18:00	Anicin: Simultaneous determination of long-term average fluxes of CR muons and solar pp-neutrinos
18:00	18:15	Malakhov: Pitch-angle distribution of isotopes of protons trapped in radiation belt
18:15	18:30	Grishantseva: Spatial characteristics of high energy electron and positron fluxes of secondary origin in the near Earth space
18:30	18:45	Berkova: Daily distribution of high ionization cosmic ray component on the "DOCH-4m" telescope
18:45	19:00	Salvini: Background radioactivity in the scaler mode technique of the ARGO-YBJ detector
19:00	19:10	Storini: Solar energetic particles in the terrestrial polar caps

2P_Pa2a: Parallel Session 4 (Chair: A. Insolia)

17:00	17:15	Kuusiniemi: Underground multi-muon experiment EMMA
17:15	17:30	Kislat: Measurement of the all-particle cosmic ray energy spectrum with IceTop
17:30	17:45	Erylkin: Do we see an iron knee?
17:45	18:00	Knurenko: The depth of maximum shower development and its fluctuations: Cosmic ray composition at $E_0 > 10^{17}$ eV

2P_Pa2b: Parallel Session 5 (Chair: A. Meli)

18:00	18:20	Jenko: Scaling theory for cross-field transport of cosmic rays in turbulent fields (<i>Invited</i>)
18:20	18:35	Spanier: Simulation of charged particle diffusion in MHD plasmas
18:35	18:50	Stenkin: Why the knee at 100 PeV could not be seen?
18:50	19:05	Conceição: Mass composition and cross-section from the shape of cosmic ray shower longitudinal profiles

THURSDAY 05-Aug-2010

3A_PI1: PLENARY SESSION 7 (Chair: TBD)

09:00	09:30	Panasyuk: Cosmic ray physics in space: the role of Sergey Vernov
09:30	10:00	Dorman: Academician Sergei Nikolaevich Vernov and foundations and development of cosmic ray variations research in USSR
10:00	10:30	Stozhkov: S. N. Vernov and study of cosmic rays in the atmosphere
10:30	11:00	Dergachev: Scientific activity of academician Sergei Vernov in Apatity (Kola peninsula) and Leningrad during 1968-1982 years

11:00 12:00 **Coffee-break and POSTER VIEWING Sessions 2 and 4**

3A_PI2: PLENARY SESSION 8 (Chair: E. Valtonen)

12:00	12:30	Tanskanen: The history of cosmic ray research in Finland
12:30	13:00	Valtaoja: History of high-energy astronomy in Finland

13:00 14:30 **LUNCH**

3P_Pa1: Parallel Session 1 (Chair: B. Heber)

14:30	14:50	Sandroos: Shock acceleration in the solar corona (<u>invited</u>)
14:50	15:05	Battarbee: Coronal shock acceleration of protons and minor ions in self-generated turbulence
15:05	15:20	Kocharov: Major solar energetic particle events in three dimensions
15:20	15:35	Morgado: A fully integrated model for Ulysses/HISCALE and ACE/EPAM data
15:35	15:50	Schlickeiser: Decoding high-frequency solar wind turbulence with nonrelativistic linearized Vlasov-Maxwell instability theory
15:50	16:05	Tylka: Magnetic field-line source regions and variability in heavy ion composition in gradual solar energetic particle events
16:05	16:15	New projects related to solar and heliospheric cosmic rays (NMDB, SEPServer)

3P_Pa2: Parallel Session 4a NEW INSTRUMENTATIONS (Chair: M. Fukushima)

14:30	14:50	Kleifges: The northern site of the Pierre Auger Observatory (<u>Invited</u>)
14:50	15:10	Parizot: Detecting ultra-high-energy cosmic rays from space, with unprecedented acceptance: Objectives and design of the JEM-EUSO Mission (<u>Invited</u>)
15:10	15:30	de Wolf: KM3NeT status (<u>Invited</u>)
15:30	15:50	Trzaska: LAGUNA – Large Apparatus for Grand Unification and Neutrino Astrophysics (<u>Invited</u>)
15:50	16:10	Ikeda: Results from the Telescope Array Experiment (<u>Invited</u>)

18:00 21:00 **CRUISE and DINNER**

FRIDAY 06-Aug-2010

4A_PI: PLENARY SESSION 1 (Chair: S. McKenna-Lawlor)

09:00	09:30	Fichtner: IBEX - the heliosphere at the solar minimum
09:30	10:00	Krimigis: Voyagers' view of cosmic rays in the heliosheath and the shape of the ENA heliosphere
10:00	10:30	Kocharov: Towards realistic models of interplanetary transport of solar energetic particles

10:30 11:00 **Coffee-break**

4A_Pa1: Parallel Session 1 (Chair: R. Vainio)

11:00	11:20	Casolino: PAMELA measurements at the minimum of cycle 23 and potential of cycle 24 (Invited)
11:20	11:40	Klein: Origin of solar cosmic rays: Flares, CMEs and other coronal activity (Invited)
11:40	12:00	Malandraki: Corotating interaction regions, coronal mass ejections and energetic particles (Invited)
12:00	12:15	Laitinen: Case studies on the effect of pre-event background in solar particle event timing
12:15	12:30	Vashenyuk: Features of relativistic solar proton spectra derived from GLE modeling
12:30	12:45	Daibog: Sequences of electron and proton events with similar characteristic decay times
12:45	13:00	Podzolk: Solar proton events and passive Carrington longitudes on the Sun

4A_Pa2: Parallel Session 6 (Chair: J. Poutanen)

11:00	11:15	Aharonian: In Memory of Alexander Plyasheshnikov
11:15	11:45	Hinton: Cherenkov telescope arrays (Invited)
11:45	12:15	Bugaev: Different concepts of next generation IACT arrays (Invited)
12:15	12:45	Sinnis: The High Altitude Water Cherenkov (HAWC) telescope (Invited)
12:45	13:00	Nakatsuka: An evaluation of electron-photon cascades developing in matter, photon and magnetic fields

13:00 14:30 **LUNCH**

4P_PI: PLENARY SESSION 6 (Chair: G. Sinnis)

14:30	15:15	Thompson: Highlights of GeV gamma-ray astronomy
15:15	16:00	de Angelis: Astrophysics with very and ultra-high energy gamma-rays

16:00 17:00 **Coffee-break and POSTER-VIEWING Sessions 1 and 6**

4P_Pa1: Parallel Session 1 (Chair: T. Laitinen)

17:00	17:15	Kiraly: Energetic ion fluxes during recent solar minima
17:15	17:30	Gieseler: Latitudinal and radial gradients of galactic cosmic ray protons in the inner heliosphere - PAMELA and ULYSSES observations
17:30	17:45	Grandi: Antiproton modulation in the heliosphere and prediction for AMS-02
17:45	18:00	Sako: Modeling of the high-energy galactic cosmic-ray anisotropy
18:00	18:15	Wawrzynczak-Szaban: The three dimensional non stationary model of the Forbush decrease of galactic cosmic ray intensity with the changeable solar wind
18:15	18:30	Abunin: Forbush-effects with sudden and gradual onset
18:30	18:45	Eroshenko: Cosmic ray anisotropy during the Forbush effects as a possible indicator of the solar source location
18:45	19:00	Kostyuk: Forbush decreases influence on registered high energy muon flux

4P_Pa2: Parallel Session 6 (Chair: F. Aharonian)

17:00	17:15	Poutanen: On the origin of GeV breaks in blazars
17:15	17:30	Petkov: Search for high energy gamma-ray bursts
17:30	17:45	Vernetto: Gamma ray sources observation with the ARGO-YBJ detector
17:45	18:00	Udo: Observation of the Fermi bright galactic sources at TeV energies with the Tibet air-shower experiment
18:00	18:15	Britto: Observations with the High Altitude GAMMA-Ray (HAGAR) telescope array in the Indian Himalayas
18:15	18:30	Sinitsyna: Very-high energy gamma-ray astronomy of galactic and extra-galactic sources by SHALON
18:30	18:45	Chilingarian: Statistical techniques in background rejection for the imaging atmospheric Cherenkov telescopes
18:45	19:00	Lagutin: From Gamma-1 to HEGRA and H.E.S.S.: contribution of the Altai gamma-ray research group

19:00 19:20 **CLOSING CEREMONY:**
I. Usoskin: Farewell words; M. Walter: Presentation of ECRS-2012