Yhteiset tilaisuudet

Torstai	10.00-15.00	*Ilmoittautuminen Linnanmaan kampuksen keskiaulassa*
	11.30-12.30	*Lounas*
	12.30-13.00	Avajaiset (sali L1)
	13.00-14.45	Yleisluennot: Ernst ja Mårtensson (sali L1)
	14.45-15.00	*Kahvi*
	15.00-16.30	Rinnakkaisistunnot 1-5
	16.30-18.30	Posteriesittely I (rinnakkaisistunnot 1-7); myös jaostokokouksia
	19.00-20.30	*Tervetulotilaisuus Oulun kaupungintalolla*
Perjantai	08.00-14.00	*Ilmoittautuminen Linnanmaan kampuksen keskiaulassa*
	09.00-10.30	Yleisluennot: Kimmich ja Eberhardt (sali L1)
	10.30-11.00	*Kahvi*
	11.00-12.45	Yleisluennot: Scheffler ja Sulzer (sali L1)
	12.45-14.00	*Lounas*
	14.00-15.30	Rinnakkaisistunnot 6-10
	15.30-17.00	Posteriesittely II (rinnakkaisistunnot 8-15)
	17.00-18.00	Vuosikokous (sali L1)
	19.00-	*Juhlaillallinen hotelli Ramadassa*
Lauantai	08.00-11.00	*Ilmoittautuminen Linnanmaan kampuksen keskiaulassa*
	09.00-10.30	Rinnakkaisistunnot 11-15
	10.30-11.00	*Kahvi*
	11.00-13.15	Yleisluennot: Stavenga, Kurki-Suonio ja Thuneberg (sali L1)
	13.15-13.30	Päivien päätös (sali L1)
	13.30-	*Lounas*

Laitenäyttely torstaina 12.30-18.30, perjantaina 10.00-18.00 ja lauantaina 09.00-13.00.

Rinnakkaisistunnot

Torstai 15.00-16.30	1. Condensed matter: structural properties	L7	Posteriesittely I torstai 16.30-18.00
	2. Atomic and molecular physics I	KE1139	
	3. Particle and nuclear physics I	PR101	
	4. Astro- and space physics and cosmology I	L8	
	5. Medical physics and imaging	PR102	
Perjantai 14.00-15.30	6. New materials and nanotechnology	L7	
	7. Particle and nuclear physics II	PR101	
	8. Astro- and space physics and cosmology II	L8	Posteriesittely II perjantai 15.30-17.00
	9. Applied physics and instrumentation I	PR102	
	10. Atomic and molecular physics II	KE1139	
Lauantai 09.00-10.30	11. Condensed matter: electronic properties	L7	
	12. Biological matter	KE1139	
	13. Optics	PR101	
	14. Applied physics and instrumentation II	PR102	
	15. Teaching of physics	L8	

Torstai 18.3.2004

10.00-15.00 **Ilmoittautuminen,** Linnanmaan kampuksen keskiaula

10.00-12.00 **Lehdistötilaisuus**, Anttilansali

11.30-12.30 Lounas

12.30-13.00 **Avajaiset,** sali L1
SFS:n pj. T. Rantala
OY:n vararehtori V. Myllylä
Fysikaalisten tieteiden laitoksen johtaja J. Jokisaari
Magnus Ehrnroothin palkinnon jako

13.00-14.45 **Kaksi yleisluentoa**, sali L1, pj. J. Jokisaari
Richard Ernst (ETH Zürich): *Academic Obligations beyond Scientific Research*
Nils Mårtensson (MAX-lab, Lund University): *MAX IV: A Proposal for a Next Generation Synchrotron Radiation Facility and Free Electron Laser Facility*

14.45-15.00 Kahvi

15.00-16.30 **Rinnakkaisistunnot** 1-5

16.30-18.30 **Posteriesittely** I; rinnakkaisistunnot 1-7
Jaostokokouksia

19.00-20.30 **Tervetulotilaisuus**, Oulun kaupungintalo

Laitenäyttely avoinna 12.30-18.30

Rinnakkaisistuntojen esitelmät ja posterit

1. Condensed matter: structural properties, sali L7, pj. M. Valden

1.1 15.00 P. Junell: Influence of pre-adsorbed oxygen on the adsorption dynamics of O_2 on Cu{100}

1.2 15.15 A. Puisto: O_2 adsorption on clean and O precovered Cu(100)

1.3 15.30 J. Frantz: Multiscale simulation of copper nanocluster deposition on copper (100)

1.4 15.45 S. von Alfthan: Clusters of amorphous Si in crystalline Si: stability and collapse

1.5 16.00 J. Hyväluoma: Intrusion of non-wetting liquid in paper

1.6 16.15 A. Finne: Quantum turbulence in rotating ^{3}He-B

2. Atomic and molecular physics I, sali KE1139, pj. S. Heinäsmäki

2.1 15.00 A. Caló: Auger electron spectroscopy of ionic molecules

2.2 15.13 A. Penttilä: Detailed theoretical study of decay processes following photoionization reveals defects in atomic structure calculations

2.3 15.26 J. Salo: Non-Markovian evolution of a two-level atom

2.4 15.39 L. Partanen: Auger cascade satellites following 3d ionization in xenon

2.5 15.52 T. Heinonen: Fuzzy position and momentum observables in quantum mechanics

2.6 16.05 S.-M. Huttula: Relativistic effects in the anisitropy of the near-threshold Kr 3d and Xe 4d photoionization

2.7 16.16 A. Soininen: Modeling of inelastic scattering spectra using multiple scattering approach

3. Particle and nuclear physics I, sali PR101, pj. H. Penttilä

3.1 15.00 S. Kopecky: Mass measurements with JYFLTRAP

3.2 15.20 A. Kankainen: The production of heavy Fr isotopes and K=0 ground-state band in ^{232}Ra

3.3 15.30 M. Kortelainen: Shell-model calculations of double-beta-decay and muon-capture processes in light nuclei

3.4 15.50 T. Grahn: RDDS lifetime measurements with JUROGAM + RITU

3.5 16.05 M. Nyman: Triple-shape coexistence in ^{186}Pb

3.6 16.15 S. Eeckhaudt: In-beam gamma-ray spectroscopy of ^{254}No

4. Astro- and space physics and cosmology I, sali L8, pj. K. Kainulainen

4.1 15.00 V. Muhonen: Energy Density Perturbations in the Early Universe

4.2 15.13 T. Multamäki: The Integrated Sachs-Wolfe effect as a probe of non-standard cosmological evolution

4.3 15.26 J. Poutanen: Physics of X-ray emission from accreting millisecond pulsars

4.4 15.39 M. Myyryläinen: Effects of degenerate sterile neutrinos on astrophysical neutrino fluxes

4.5 15.52 H. Salo: Dynamical and photometric modeling of Saturn's rings

4.6 16.05 J. Virtanen: Asteroid impact risk assessment at discovery

16.18 K. Kainulainen: Review of the Thursday's poster session

5. Medical physics and imaging, sali PR102, pj. T. Jämsä

5.1 15.00 R. Lappalainen: Interaction of mobile phones with implants

5.2 15.20 J. Sierpowska: Electrical and dielectric properties of human trabecular bone – relationships with mechanical properties

5.3 15.40 T. Neuvonen: Analysis software for diffusion tensor imaging

5.4 16.00 M. Nissi: MRI quantitation of proteoglycans with dGEMRIC in human bovine and porcine articular cartilage

5.5 16.15 L. Porra: 3D assessment of regional lung volume and airway structure using synchrotron radiation computed tomography

Posteriesittely I; rinnakkaisistunnot 1-7
Keskusaula 16.30-18.30

1. Condensed matter: structural properties, pj. M. Valden

1.7 K. Lahtonen: Oxide nucleation during the oxidation of Cu{100} surface studied by scanning tunnelling microscopy

1.8 K. Lahtonen: Cu{100}, Cu(Ag) and OFHC-Cu surface oxidation studied by XPS and TEM

1.9 M. Valden: Effects of Ag and S on the initial oxidation of Cu{100}

1.10 M. Aronniemi: Iron oxide thin films: effects of the growth temperature and time on the film properties

1.11 H. Pitkänen: Surface and subsurface O at Cu(100) and Cu(111)

1.12 L. Laurson: Surface criticality and the 3-dimensional random field Ising model

1.13 I. Vattulainen: Non-equilibrium effects in spreading and diffusion on stepped surfaces

1.14 E. Niemi: Interference between competing tunneling channels and chemical resolution of STM

1.15 M. Mäki-Jaskari: Computational investigation of surface structures of indium oxide

1.16 S. Mattila: Fe 3p core level spectra of pristine and oxidized pyrite

1.17 T. Laiho: A comparative XPS study of irradiation damage and different metal-sulfur bonds of 1-dodecanethiol on silver and copper surfaces

1.18 I. Ojala: Ink printing of nano-YBCO wires

1.19 H. Huhtinen: Thickness dependence of superconducting and structural properties of YBCO films prepared by PLD from a nanostructured target

1.20 J. Välikangas: Weak links in YBCO nanopowder

1.21 L. Miettinen: Height fluctuation distributions in combustion fronts

1.22 T. Ahlgren: Mobility of D in tungsten

1.23 P. Träskelin: Molecular dynamics studies of carbon first wall interactions

1.24 H. Junes: Experimental studies on the roughening transition in ^{3}He

1.25 E. Pentti: New aspects on using fine copper powder as a nuclear refrigerant for helium mixtures

1.26 T. Virtanen: Calculation of hydrodynamic vs. ballistic cross-over for vibrating wire in ^{3}He-^{4}He mixture

2. Atomic and molecular physics I, pj. S. Heinäsmäki

2.8 S.-M. Huttula: Experimental and theoretical study of the cascade Auger transitions in Kr and Xe

2.9 Z. Hu: Normal auger spectra of bromine in gas phase XBr (X= H, Li, Na, K, Cs) molecules

2.10 R. Sankari: Angular distribution of Xe 5p spin-orbit components at 100-200 eV photon energies

2.11 A. Penttilä: Using deconvolution method to improve resolution without a

loss in transmission

2.12 S. Heinäsmäki: Strong electron correlation in Ca 2p, Sr 3d and Ba 4d core hole states investigated by means of photoelectron spectroscopy and MCDF calculations

2.13 M. Huttula: Photon induced processes in cesium halide dimers

2.14 M. Huttula: 4d photoionization of atomic indium

2.15 S. Osmekhin: Experimental and theoretical study of the resonance Auger decay of Xe $4d^{-1}6p$

2.16 L. Partanen: Multiple ionization of Xe – Comparison of de-excitation pathways following $3d^{-1}$ ionization and $3d^{-1}6p$ resonance excitation

2.17 S. Alanko: The C–H bending vibration υ_4 of chloroform $CH^{35}Cl_3$

2.18 K. Kyllönen: High resolution FTIR spectroscopy on CH_2DI and CHD_2I: the accurate ground state constants determined from the fundamental bands υ_6

2.19 J. Lohilahti: The ground state spectrum $D_2{}^{13}CO$ molecule measured by FTIR-spectrometer

2.20 J. Lohilahti: The υ_4 and υ_5 fundamental bands of formic acid molecule HCOOH together with $2\upsilon_7$, $\upsilon_7 + \upsilon_9$ and $2\upsilon_9$ states

2.21 N. Meinander: The ring-puckering vibrations of a molecule with two equivalent rings. A study of bicyclo[3.3.0]oct-1,5-ene

3. Particle and nuclear physics I, pj. H. Penttilä

3.7 U. Hager: The JYFLTRAP triple trap system at the IGISOL facility

3.8 T. Lönnroth: Study of Level Densities at Alpha-Cluster Energies in $^{27,28}Si$, $^{50,51}V$ and $^{93\text{-}98}Mo$

3.9 H. Penttilä: IGISOL 3 at JYFL

3.10 J. Toivanen: New computer program for large nuclear shell model calculations

3.11 T. Malkiewicz: Energy loss of alpha particles in nickel

3.12 H. Penttilä: Yield of heavy fission fragments in p-induced fission of ^{238}U

3.13 P. Jones: JUROGAM

3.14 T. Lönnroth: Light Nuclei: Alpha-Particle Resonances, Level Densities, Shell-model Quartets, and All That

3.15 S. Iamaletdinov: Collinear cluster tripartition preliminarily confirmed

3.16 A.-P. Leppänen: Spectroscopy of NO-252 with recoil-alpha and recoil-fission tagging methods

3.17 I. Moore: Optical spectroscopy of short lived isomers at the IGISOL facility

4. Astro- and space physics and cosmology I, pj. K. Kainulainen

4.7 N. Babkovskaia: Water masers in dusty environments

4.8 J. Huovelin: The Finnish X-ray Microsatellite HEAWiFM

4.9 S. Maisala: Integral JEM-X instrument background modelling

4.10 P. Muhli: Optical bursts in the evolving light curves of the X-ray binary UW CrB

4.11 M. Karttunen: Collapses and explosions in self-gravitating systems

4.12 P. Rautiainen: Dynamical modelling of a four-armed barred spiral galaxy ESO 566-24

4.13 L. Pelttari: NGC 5426/27 (Arp 271) – Near-IR observations and modelling

4.14 R. Karjalainen: Gravitational accretion of particles in Saturn's rings

4.15 R. Morishima: Spin rate of small moonlets embedded in planetary rings

4.16 K. Muinonen: Lunar imaging science using AMIE aboard SMART-1

4.17 K. Muinonen: Physical characterization of asteroids from photometric lightcurve and phase curve data

4.18 K. Muinonen: Mercury X-ray spectrometer (MXS) and solar X-ray monitor (SXM) for BepiColombo

4.19 T. Jämsén: The muon flux decrease during the solar flares of 19 Oct - 4 Nov 2003 observed with MUG - muon telescope

4.20 J. Virtanen: Asteroid identification at discovery

4.21 M. Aittola: Mars studies will benefit from the advanced data sets acquired by the notable European Mars mission

4.22 I. Sillanpää: Modelling of the ion escape at Titan

4.23 I. Sillanpää: ASPERA instruments on Mars Express and Venus Express to study Martian and Venusian atmospheric erosion

5. Medical physics and imaging, pj. T. Jämsä

5.6 E. Hippeläinen: Development of patient positioning for BNCT at FiR 1 reactor

5.7 M. Timonen: The first it *in vivo* 1H MRS study of BPA in the Finnish boron neutron capture therapy (BNCT) trial

5.8 H. Suhonen: Small-angle x-ray scattering from breast tissue samples compared with simulation results

5.9 J. Perkiö: Refinement of an expectation maximation algorithm in assessing tracer kinetics by dynamic susceptibility contrast magnetic resonance imaging

5.10 R. Korhonen: Fibril reinforced poroelastic model differentiates mechanical behavior between human and porcine articular cartilage

5.11 M. Hakulinen: Sensitivity of acoustic parameters to mineral density and mechanical properties of bovine bone

5.12 R. Lappalainen: Simulation studies of the five most commonly used THR implants in Finland

5.13 S. Turunen: Spectroscopic techniques for tablets

5.14 K. Piipponen: A new method for biopotential measurements in elecromagnetically noisy environments

5.15 M. Puurtinen: Recording ECG potentials with closely separated bipolar electrodes – modelling approach vs. clinical data

6. New materials and nanotechnology, pj. J. Pekola

6.7 J. Zaratiegui: Optimal size three-dimensional quantum rings

6.8 K. Alekseev: Symmetry-breaking and domains in THz-driven semiconductor superlattices

6.9 T. Rantala: Singlet and triplet two-electron states in harmonic quantum dots

6.10 T. Rantala: Time-dependent density functional calculations on the electronic absorption spectra of an asymmetric meso-substituted porphyrin and its zinc complex

6.11 J. Lappalainen: Characterization of optical properties of nanocrytalline $Pb(Zr_xTi_{1-x})O_3$ thin films

6.12 S. Saukko: Tailored nanocrystalline WO_3 films for gas sensing applications

6.13 P. Kivinen: Shot noise characterization of Nb/AlOx/Nb structures at low temperature

6.14 S. Jussila: Use of small-molecular organic compound (TPD) as a semiconductor in an organic field-effect transistor

6.15 M. Tiitu: Cylindrical self-organization of conjugated polymers: a potential route towards metal-insulator transition

6.16 N. Volk : Highly Organized Mesomorphic Structures of Polypyridine and its Salts: A Route towards Ionic Liquid Cristalls

6.17 O. Ikkala: Towards switching photonic bandgap in solid polymer films based on comb-shaped supramolecules

6.18 A. Nykänen: Design of externally controllable mesoporous polymeric materials.

6.19 O.-V. Kaukoniemi: Electrically conductive chemical pulp fibres

6.20 R. Korhonen: Amorphous diamond coating improves osseointegration of titanium implant in a rat femur

6.21 M. Mikkonen: Quantum dot with a charged impurity

6.22 P. Koppinen: Ion beam sputtering method for progressive reduction of nanostructures dimensions

6.23 M. Zgirski: Experimental evidence of quantum phase slip phenomena in ultra-narrow superconducting channels

6.24 P. Jalkanen: Superconductivity in Fe implanted nanosized Al films on Si

6.25 P. Koskinen: Energy spectrum and electron localization in quantum rings

6.26 V. Korpelainen: Developement of an interferometrically traceable AFM at MIKES

6.27 K. Nordlund: Irradiation effects in multi-walled carbon nanotubes

6.28 H. Karhu: XPS studies of platinum and palladium catalysts with different preparation methods

6.29 T. Bäcklund: A high-performance all-polymer transistor utilizing a hygroscopic insulator

6.30 H. Raebiger: Magnetic coupling in the presence of vacancies and vacancy-defect complexes in (Ga,Mn)As

6.31 Gh.-S. Paraoanu: Low-bias tunnelling effects in Nb single electron transistors

7. Particle and nuclear physics II, pj. K. Huitu

7.8 A. Heikkinen: GEANT4 shielding simulation of graphite-epoxy composite material for a satellite electronics housing

7.9 A. Heikkinen: Data analysis framework for optimization of neural networks by genetic algorithm

7.10 T. Mäenpää: Verifying Detector Module Quality in High Quantities

7.11 H. Seppänen: SSD module assembly for the ALICE exeriment at CERN/LHC

7.12 M. Voutilainen: An Electron Isolation Algorithm for Data Analysis of the CERN CMS Experiment

7.13 T. Mäki: Resolution and triggering feasibility studies for leading proton measurements at the LHC

7.14 M. Järvinen: Quark-antiquark bound states in 1+1 dimensional QCD

7.15 M. Vepsäläinen: Mesonic correlation lengths in high-temperature QCD

7.16 V. Kolhinen: Enhancement of charm quark production due to nonlinear corrections to the DGLAP equations

7.17 S. Räsänen: Predictions for Hadron Spectra at LHC

7.18 H. Honkanen: High-p_T hadron spectra with parton energy loss through multiple soft scattering

7.19 T. Enqvist: CUPP – Centre for Underground Physics in Pyhäsalmi. Past, present, and future

7.20 S. Nurmenniemi: Latest Development of the Prototype of the Multimuon Experiment

Perjantai 19.3.2004

08.00-14.00 **Ilmoittautuminen,** Linnanmaan kampuksen keskiaula

09.00-10.30 **Kaksi yleisluentoa**, sali L1, pj. K. Hämäläinen
Rainer Kimmich (University of Ulm): *Probing into Transport of Fluids in Porous Media of Length Scales from Millimeters to Nanometers by NMR*
Wolfgang Eberhardt (BESSY, TU Berlin): *Magnetic Nanostructures: From Basic Science to Technology*

10.30-11.00 Kahvi

11.00-12.45 **Kaksi yleisluentoa**, sali L1, pj. Tuomo Nygrén
Mathias Scheffler (Fritz-Haber Institute, Berlin): *Computational Nanoscale Research that will Catalyze Industrial Processes*
Michael Sulzer (Arecibo Observatory, Puerto Rico): *Arecibo Observatory and Incoherent Scatter*

12.45-14.00 Lounas

14.00-15.30 **Rinnakkaisistunnot** 6-10

15.30-17.00 **Posteriesittely** II; rinnakkaisistunnot 8-15

17.00-18.00 **Vuosikokous**, sali L1

19.00- **Juhlaillallinen,** hotelli Ramada

Laitenäyttely avoinna 10.00-18.00

Rinnakkaisistuntojen esitelmät ja posterit

6. New materials and nanotechnology, sali L7, pj. J. Pekola

6.1 14.00 A. Foster: Probing organic molecules on an insulating oxide surface

6.2 14.20 T. Bäcklund: The influence of moisture and current modulation of an all polymer transistor utilizing a hygroscopic insulator

6.3 14.40 M. Pääkkö: Nanostructured and conductive electrospun nanofibers

6.4 14.52 S. Tuukkanen: Guiding of oligonucleotides with electric field and characterization of immobilized DNA using gold nanoparticles labeling

6.5 15.04 R. Lindell: Measuring shot noise with a small Josephson junction

6.6 15.16 M. Tyunina: Dielectric Fourier spectroscopy and piezo-force microscopy of a field-induced polar phase in epitaxial films of relaxor $PbMg_{1/3}Nb_{2/3}O_3$

7. Particle and nuclear physics II, sali PR101, pj. K. Huitu

7.1 14.00 K. Österberg: The TOTEM experiment at LHC

7.2 14.13 P. Luukka: Quality testing of silicon detector modules

7.3 14.26 H. Seppänen: Long-term reliability of the ALICE silicon strip detector modules

7.4 14.39 A. Vuorinen: Thermodynamics of hot and/or dense quark-gluon plasma

7.5 14.52 J. Koponen: Energy spectrum of a heavy-light meson

7.6 15.05 P. Piirola: Dispersion relation constrained partial wave analysis of pion-nucleon scattering

7.7 15.18 H. Niemi: Photon production from non-equilibrium QGP in heavy ion collisions

8. Astro- and space physics and cosmology II, sali L8, pj. K. Mursula

8.1 14.00 I. Usoskin: Latitudinal dependence of low cloud amount on cosmic ray induced ionization

8.2 14.13 K. Kaila: Height of the atomic oxygen emission in the artificial aurora observed on 12th Nov 2001

8.3 14.26 B. Damtie: Optimal waveforms for an incoherent scatter radar

8.4 14.39 T. Asikainen: Statistical study of the energetic particles in the exterior cusp and high-latitude dayside plasma sheet

8.5 14.52 J. Huovelin: First results of the X-ray Solar Monitor onboard SMART-1

8.6 15.05 A. Mälkki: First results from SMART-1 / SPEDE plasma experiment

15.18 K. Mursula: Review of the Friday's poster session

9. Applied physics and instrumentation I, sali PR102, pj. T. Ahlgren

9.1 14.00 J. Kivioja: Cooper pair sluice: the flux assisted charge pump

9.2 14.20 E. Tuovinen: Extreme radiation hard silicon particle detectors for very high luminosity colliders

9.3 14.40 R. Sankari: Studies of different designs to update the Finnish-Swedish beamline I411 at Max-laboratory

9.4 14.55 O. Tarvainen: A new plasma potential measurement instrument for ion sources

9.5 15.10 T. Lampen: Sensor alignment by precision measurements of CERN CMS Tracker rod frames

9.6 15.20 J. Vartiainen: Efficient decomposition of quantum gates

10. Atomic and molecular physics II, sali KE1139, pj. J. Vaara

10.1 14.00 V.-V. Telkki: The freezing and melting phenomena of acetonitrile confined to mesoporous materials as studied by ^{129}Xe NMR – a new possibility to derive information about pore sizes

10.2 14.13 P. Manninen: Quadratic magnetic-field dependence of NMR parameters

10.3 14.26 Romero, Rodolfo: Laser-induced NMR shifts in the rare gases

10.4 14.39 M. Hakala: Hydrogen bonding in water: properties of the coordination shell

10.5 14.52 M. Möttönen: Calculations of excitations in Bose-Einstein condensates within second order theory

10.6 15.05 I. Moore: Atom trap trace analysis of Kr-81

10.7 15.18 S. Majaniemi: Unified framework for density functional theories

Posteriesittely II; rinnakkaisistunnot 8-14
Keskusaula 15.30-17.00

8. Astro- and space physics and cosmology II, pj. K. Mursula

8.7 C.-F. Enell: High-altitude transient luminous events (TLEs) as a mechanism for solar-terrestrial coupling

8.8 I. Usoskin: Cosmic ray induced ionization in the troposphere: numerical model

8.9 E. Turunen: Variation of atomic oxygen concentration in the mesosphere as observed by the EISCAT incoherent scatter radar

8.10 T. Nygrén: Finnish ionospheric tomography chain – current database of 2727 satellite overpasses

8.11 H. Holma: Recognizing blue emission in artificial aurora

8.12 J. Jussila: High-resolution eiscat and optical observations of active rayed auroral arcs

8.13 A. Aikio: Relation of interplanetary magnetic field and polar cap sporadic-E

8.14 A. Kero: Postfiltering unwanted power line harmonics and lightning signals in VLF recordings

8.15 A. Oikarinen: Magnetospherically propageted power line radiation detected in Northern Finland

8.16 M. Danielides: Multiple-onset substorm case study using crres satellite and ground based measurements

8.17 E. Huttunen: Cluster observations of sudden increases of the tail lobe magnetic field

8.18 A. Karinen: Dst index since 1932

8.19 J. Vilppola: The Cassini plasma spectrometer (CAPS/IBS) and the orbit insertion in July 2004

8.20 K. Mursula: Bashful ballerina: Southward shifted heliospheric current sheet

8.21 K. Mursula: Did open solar magnetic field increase during the last 100 years: A reanalysis of geomagnetic activity

8.22 I. Usoskin: A millennium scale sunspot number reconstruction: Evidence for an unusually active Sun since the 1940's

8.23 K. Alanko: Streaming of galactic cosmic rays in the heliosphere and the role of drifts

9. Applied physics and instrumentation I, pj. T. Ahlgren

9.7 M. Muikku: Emergency preparedness: New spectrometers for local food and environmental laboratories

9.8 P. Vihinen: A thermoelectric cooler array for lifetime studies of microelectronic components

9.9 S. Pirojenko: High penetration heavy ions at the RADEF test site

9.10 F. Reurings: Magnetically shielded detector for pulsed positron beam

9.11 M. Valden: Metal-support and metal-metal interactions in alumina supported Pd, Pt and Rh catalysts

9.12 R. Lappalainen: Improvements in the surface characteristics of stainless steel workpieces by the diamond tip burnishing process

9.13 P. Miettinen: Evaluation of wood properties by new techniques

9.14 A. Koistinen: Effect of bone mineral density on bone screw insertion torque – a study with peripheral quantitative computed tomography (pQCT) and human femoral bone

9.15 E. Hæggström: Microfluidic sonicator for real-time disruption of eukaryotic cells and bacterial spores for DNA analysis

9.16 A. Ikonen: Safety case of a spent nuclear fuel repository – a technical multivariable risk assessment

10. Atomic and molecular physics II, pj. J. Vaara

10.8 O. Kärki: Numerical studies of the stability of an attractively interacting Bose-Einstein condensate and studies of the required numerical methods

10.9 T. Isoshima: Collective oscillation of vortex lattices in rotating Bose-Einstein condensates

10.10 T. Isoshima: Intersite and in-site excitations of Bose-Einstein condensate in an optical lattice

10.11 H. Mäkelä: Topological defects in spinor Bose-Einstein condensates

10.12 S. Virtanen: Stability of vortices in dilute Bose-Einstein condensates within mean-field theories

10.13 I. Tittonen: Loading technique for surface-mounted microscopic atom traps based on a gravito-optical surface trap

10.14 J. Saunavaara: 129-Xe NMR shielding and diffusion in the A and C* phases of a chiral smectic liquid crystal

10.15 A. Kantola: Deuterium NMR spectroscopy and field-induced director dynamics in liquid crystals

10.16 P. Lantto: Relativistic heavy atom effect in heavy atom shielding (HAHA) in XH_3^- (X = C, Si, Ge, Sn, Pb)

10.17 T. Koskela: Application of ^{129}Xe nuclear magnetic resonance spectroscopy to study the shielding tensors of adsorbed xenon in various aluminophosphate molecular sieves

11. Condensed matter: electronic properties, pj. K. Saarinen

11.7 J. Karvonen: Electron-phonon interaction in thin copper films

11.8 K. Rytkönen: Sodium atoms and clusters on graphite: a density functional study

11.9 M. Punkkinen : Electronic and magnetic properties of bulk, (100), and (111) surfaces of the MnPt3: An *ab initio* study

11.10 P. Laukkanen: Geometry of GaAs(100)(2x4) surface under less As-rich conditions

11.11 V. Arpiainen: Dft-simulated STM images of GaAs (110) cleavage surface

11.12 R. Väänänen: Electron transport through ferromagnetic resonant tunneling diodes modelled by Green's function formalism

11.13 T. Taipaleenmäki: Phase diagram of electrons mixed with holes in semiconductors and with protons in giant planets

11.14 A. Mattila: Electronic structure of MgB_2 studied using inelastic x-ray scattering

11.15 R. Perälä: Photoemission study of Yb on vicinal Si(100) surface

11.16 P. Virtanen: Thermopower induced by a supercurrent in mesoscopic superconductor–normal-metal structures

11.17 H.-P. Komsa: Atomic and electronic structures of nitrogen interstitials in GaAs

11.18 H.-P. Komsa: Computational study of the structure and properties of $GaAs_{1-x}N_x$

11.19 J. Isohätälä: Nonlinear transport phenomena in the pendulum limit of semiconductor superlattices

11.20 J. Levoska: O K-edge x-ray absorption spectroscopy of $Ba_{1-x}Sr_xTiO_3$ thin films

11.21 H. Saarikoski: Vortices in the Electronic Structure of the 2-Dimensional Quantum Dots in High Magnetic Fields

11.22 R. Lindell: The Bloch Oscillating Transistor

11.23 E. Räsänen: Impurity effects in quantum dots: A realistic model

11.24 J. Toppari: Turnstile behaviour of the Cooper-pair pump

11.25 J. Kinnunen: Laser probing superfluid signatures of a Feshbach resonant Fermi gas

11.26 K. Kokko: Resonant inelastic x-ray scattering related to physically different sheets of the Fermi surface of magnesium diboride

11.27 K. Manninen: Ab initio simulations of melting of sodium clusters

11.28 M. Ropo: *Ab initio* study of the surface segregation of PdAg alloy

11.29 P. Lehtinen: Structure and magnetic properties of adatoms and vacancies in graphite and carbon nanotubes

11.30 T. Torsti: MIKA: a multigrid-based program package for electronic structure calculations

11.31 M. Aunola: Discretised complex Coulomb problem – an exactly solvable model

11.32 J. Pekola: Limitations in electronic cooling and observation of strong enhancement of Josephson coupling by quasiparticle extraction

12. Biological matter, sali KE1139, pj. O. Ikkala

12.7 P. Nikunen: Numerical aspects of the dissipative particle dynamics method

12.8 P. Nikunen: Computer simulations of vesicle formation and diffusion

12.9 M. Louhivuori: Probing chain-like molecules using residual dipolar couplings

12.10 E. Falck: Use of free area theory in explaining lateral diffusion in biomembranes

12.11 E. Salonen: Alcohol-induced changes in the structure and dynamics of lipid

bilayers and their implications to intrinsic protein functioning

12.12 M. Miettinen: From a molten globule to a swollen coil: Simulations of a lone polymer chain in an explicit solvent

12.13 P. Niemelä: Hydrogen bonding in sphingomyelin bilayers

12.14 I. Vattulainen: Dynamical Scaling Brolen in Two-dimensional Dilute Polymer Solution.

12.15 M. Patra: How antibiotics interact with membranes: Molecular dynamics simulations of fusidic acid

12.16 M. Patra: Surprises in microscopic simulations of aqueous solutions

12.17 K. Kisko: Structural studies of hydrophobin protein thin films

12.18 I. Vattulainen: Modeling lipoprotein core through molecular dynamics simulations

12.19 M. Patra: A computational perspective of hydrophobins through molecular dynamics simulations

12.20 S. Andersson: Studies of crystallinity of Scots pine and Norway spruce cellulose

12.21 M. Peltomäki: Hosts and parasites on scalefree graphs

12.22 E. Terämä: Simulation of dielectrophoresis of colloidal particles

12.23 I. Vattulainen: Towards understanding of cationic lipid lipid bilayers from atomistic molecular dynamics simulations

12.24 T. Murtola: Coarse-grained model for phospholipid/cholesterol bilayers

12.25 I. Vattulainen: Dynamics of lipid bilayers influenced by truncation of electrostatic interactions

12.26 I. Vattulainen: How to efficiently deal with electrostatic interactions in soft matter simulations: The reaction-field approach

12.27 M. Peura: The effect of fertilisation on the structure and chemical composition of wood

12.28 M. Weckström: Microvillar membrane and electrical properties of insect photoreceptors

12.29 I. Salmela: Hodgkin-Huxley type compartmental modelling of cockroach photoreceptors

12.30 K. Heimonen: Reassesment of Rushton's principle of univariance

12.31 M. Huotari: Measurement and analysis of insect olfactory sensors

12.32 U. Vainio: DNA as a template for selforganized nanostructures

13. Optics, sali PR101, pj. S. Alanko

13.7 A. Shevchenko: Creation of a hollow laser beam using self-phase modulation in a nematic liquid crystal

13.8 M. Hautakorpi: Generation of spatially smooth evanescent-wave profiles in a multimode hollow optical fiber for atom guiding

13.9 O. Kimmelma: Nonlinear photonic crystals fabricated with electric field poling in lithium niobate

13.10 A. Priimägi: Nonlinear optical properties of self-organized polymeric systems

13.11 S. Kujala: Effects of polarization and grating period on second-harmonic

generation from arrays of anisotropic gold nanoparticles

13.12 T. Vallius: On soft X-ray and ultraviolet optical properties of metallic gratings

13.13 T. Vallius: Rigorous justification of the thin element approximation

13.14 J. Aikio: High-resolution imaging optics needing no assemply-phase optical adjustments

13.15 K. Kataja: FDTD simulations of super resolution optical data storage systems

13.16 A. Jaakkola: Rewritable magnetic-field patterns above a transparent ferrimagnetic film for trapping neutral atoms

13.17 J. Lindberg: Spectral analysis of resonant light transmission through a sub-wavelength slit

13.18 A.-J. Mattila: Modelling of the local electric field of silver particles in surface-enhanced Raman scattering by FDTD method

13.19 K. Jefimovs: Optical activity of chiral metallic nanoparticles

13.20 J. Pietarinen: Fabrication of surface relief spectrograph gratings with UV-casting method

13.21 M. Meretoja: Electroluminescence from Si/SiO2 microdevices on patterned silicon wafers

13.22 J. Lehtomaa: Measurements of absorption line intensities using FTIR spectrometer

14. Applied physics and instrumentation II, pj. J. Kauppinen

14.6 V. Koskinen: Measurement of the Brownian motion in a micro-cantilever

14.7 J. Kallunki: A continuum model for the paper-air-toner system

14.8 A. Mäkinen: Induction heating and automated temperature control for electron spectroscopic measurements

14.9 P. Vihinen: Scanning white-light interferometer and its applications

14.10 A. Wallinin kollegat: Mechanical Characterization of Molecular Motors Using Optical Tweezers

14.11 J. Rosti: Damage mechanism in paper via acoustic emission

14.12 J. Järvinen: Cryogenic MM-wave and RF instrumentation for electron-spin resonance in atomic hydrogen

14.13 T. Koponen: Mechanical properties of Norway spruce as a function of year ring by ultrasonic testing

14.14 I. Lassila: Ultrasonic shear wave measurement of coating layer formation

14.15 E. Loos: Design of a new high-resolution time-of-flight electron spectrometer

14.16 C. Bae: Noise and material characterization for transition-edge sensor arrays

15. Teaching of physics, pj. K. Kaila

15.2 E. Eloranta: “Geophysical field theory” – an example of teaching physical principles at university level

Lauantai 20.3.2004

08.00-11.00 **Ilmoittautuminen,** Linnanmaan kampuksen keskiaula

09.00-10.30 **Rinnakkaistunnot** 11-15

10.30-11.00 Kahvi

11.00-13.15 **Kolme yleisluentoa**, sali L1, pj. Matti Weckström
Doekele Stavenga (University of Groningen): *Physics of Insect Compound Eyes*
Hannu Kurki-Suonio (University of Helsinki): *The status of cosmology after WMAP*
Erkki Thuneberg (University of Oulu): *Theories for Fermi Superfluids*

13.15-13.30 **Päivien päätös**, sali L1

13.30- Lounas

Laitenäyttely avoinna 09.00-13.00

Rinnakkaisistuntojen esitelmät

11. Condensed matter: electronic properties, sali L7, pj. K. Saarinen

11.1 09.00 S. Jaatinen: Reactivity of Pd doped Ag surfaces

11.2 09.15 A. Pivrikas: Charge carrier transport and recombination in organic solar cells measured using time-of-flight techniques

11.3 09.30 K. Kärkkäinen: Density functional theory of multicomponent quantum dots

11.4 09.45 P. Havu: Electron transport through quantum wires and point contacts

11.5 10.00 P. Kivinen: Variation of the electron-phonon interaction in silicon at sub-Kelvin temperature

11.6 10.15 Gh.-S. Paraoanu: Quantum manipulation of Josephson qubits with r.f. pulses

12. Biological matter, sali KE1139, pj. O. Ikkala

12.1 09.00 E. Falck: Packing, free area, and lateral diffusion in phospholipid/cholesterol bilayers

12.2 09.15 P. Niemelä: Biophysical aspects of sphingomyelin bilayers

12.3 09.30 M. Patra: Had a drink last night? What alcohol does to membranes

12.4 09.45 M. Karttunen: Electrokinetics of biological cells and colloid

12.5 10.00 M.-P. Sarén: Determination of fiber orientation in wood using X-ray diffraction and laser scattering

12.6 10.15 T. Leppänen: Morphological transitions in Turing systems

13. Optics, sali PR101, pj. S. Alanko

13.1 09.00 T. Koponen: Coupling and decoupling of waveguides in two-dimensional photonic crystals

13.2 09.15 A. Huttunen: Band structures of photonic crystal slabs

13.3 09.30 K. Alekseev: Cascading, switching and chaos in nonlinear photonic crystals

13.4 09.45 K. Lindfors: Degree of polarization in tightly focused optical fields

13.5 10.00 Yu. Svirko: Observation of the optical rectification effect in nanocarbon films

13.6 10.15 Alkuperäinen esitys peruttu; korvataan jollain toisella

14. Applied physics and instrumentation II, sali PR102, pj. J. Kauppinen

14.1 09.00 K. Kokkonen: Phase sensitive absolute amplitude measurements of surface waves using heterodyne interferometry

14.2 09.18 O. Holmgren: Imaging of acoustic fields generated in a longitudinal leaky SAW resonator

14.3 09.36 M. Koskenvuori: Long-term stability of SOI-microresonators

14.4 09.54 J. Maaranen: Drag reduction effect in pipe flow of polymer solutions

14.5 10.12 M. Paajanen: Adhesion measurements of nano-particles on alumina and silica surfaces

15. Teaching of physics, sali L8, pj. K. Kaila

15.1 09.00 J. Sirviö: Use of household materials and garbage items in physics – how to demonstrate physics at upper secondary school level by using equipments of everyday life?

15.2 09.30 E. Eloranta: “Geophysical field theory” – an example of teaching physical principles at university level

15.3 09.45 P. Granholm: eEDUSER – eLearning without borders

15.4 10.00 K. Kaila: The Bologna process

Ilmoittautuminen

Ilmoittautuminen tapahtuu Linnanmaan kampusalueen keskiaulassa: torstaina 10.00-15.00, perjantaina 08.00-14.00 ja lauantaina 08.00-11.00.

Verkkoyhteydet

Fysiikan päiville osallistujat pääsevät tietokoneverkkoon fysiikan opetuslaboratorio 1:ssä olevilla tietokoneilla; ohjeita saa ilmoittautumistiskiltä. Omilla koneilla pääsee vain langattomaan verkkoon; 24 tunnin vierailijatunnuksia ja niihin liittyviä ohjeita saa ilmoittautumistiskiltä (ks. myös http://www.panoulu.net).

Suulliset esitelmät

Suullisten esitelmien pituudet vaihtelevat rinnakkaistunnoittain. Tarkista oman esitelmäsi ajankohta ja pituus ohjelmasta; muista jättää aikaa myös keskustelulle. Esitelmiä varten saleissa on piirtoheittimet ja tietokoneet ja niihin kytketyt dataprojektorit. Koneissa on verkkoyhteys, MS Office XP, OpenOffice.org, Internet Explorer sekä Acrobat Reader.

Dataprojektorilla esitettävän esitelmän tapauksessa olisi suotavaa, että tiedoston toimivuus testattaisiin esityssalin koneessa ennen istunnon alkua. Jos tiedostoa ei ole lähetetty etukäteen, se tulee toimittaa Oulussa hyvissä ajoin ilmoittautumispaikalle USB-muistilla, CD-ROMilla tai disketillä. (Jos tiedosto on omalla kannettavalla koneella, järjestäjät siirtävät sen eteenpäin USB-muistipalikan avulla.) **Osallistujien omia kannettavia ei kytketä dataprojektoreihin!**

Posterit

Posteritaulujen koko (leveys × korkeus) on 100 cm × 120 cm. Torstain esittelyn posterit voi ripustaa torstaina aamupäivästä alkaen ja ne tulee poistaa samana päivänä posteriesittelyn päätyttyä klo 18.30. Perjantain posterit voi ripustaa heti aamusta ja ne tulee poistaa heti posteriesittelyn päätyttyä klo 17.00. **Postereiden taulupaikat merkitään ohjelmassa käytetyin tunnusnumeroin**.

Kokousjulkaisu

Abstraktit sisältävä kokousjulkaisu ilmestyy Oulun yliopiston Fysikaalisten tieteiden laitoksen raporttisarjassa ja jaetaan kokouksen osanottajille normaaliin tapaan kirjan muodossa. Koska sarjan teoksista halutaan julkaista myös sähköiset versiot, osanottajia pyydetään kertomaan ilmoittautumistiskillä, jos tämä nähdään jotenkin ongelmallisena asiana oman abstraktin kohdalla.

Nimikyltit

Nimikylttien taustavärit on koodattu seuraavaan tapaan:

valkoinen	Fysiikan päivien osallistuja
sininen	järjestely- tai ohjelmatoimikunnan jäsen, saliavustajat
keltainen	Fysiikan opiskelijoiden kerhon (FOK) avustaja
vihreä	lukiolaisosallistuja

Näytteilleasettajat

Laitenäyttely sijaitsee kampusalueen keskiaulassa ja on avoinna päivien ajan: torstaina 12.30-18.30, perjantaina 10.00-18.00 ja lauantaina 09.00-13.00.

Advanced Vacuum Finland Oy
www.advanced-vacuum.fi

Cheos Oy
www.cheos.fi

CSC Oy
www.csc.fi

Gammadata Finland Oy
www.gammadatafinland.fi

Terra Cognita Oy
www.terracognita.fi

YTM-Industrial Oy
www.ytm.fi

YHDISTELMÄ
LINNANMAA - KESKUSTA

linja 4	linattiin (pyhinä Sanginsuuhun)
6	Kumpulankankaalle
7	Kaakkuriin Metelinkankaallle
19	Oulunsaloon
22	Heinäpäähän
23	Kaukovainion ja Kempeleen kautta Oulunsaloon
24	Hiiroseen

MA - PE

LINJA	4				6		7		19			22	23	24	
tunnit	minuutit														
05									05	30					05
06		15		45			15		00	25	45		50	30	06
07		15	30+	45	05	35	15	45	05	25	45	15	45	40	07
08	00+	15	30+	45	05	35	15	45	05	25	45	15	45	40	08
09	00+	15	30+	45	05	35	15	45	05	25	45	15		40	09
10	00+	15	30+	45	05	35	15	45	05	25	45	15		40	10
11	00+	15	30+	45	05	35	15	45	05	25	45	15		40	11
12	00+	15	30+	45	05	35	15	45	05	25	45	15		40	12
13	00+	15	30+	45	05	35	15	45	05	25	45	15	45	40	13
14	00+	15	30+	45	05	35	15	45	05	25	45	15	45	40	14
15	00+	15	30+	45	05	35	15	45	05	25	45	15	45	40	15
16	00+	15	30+	45	05	35	15	45	05	25	45	15	45	40	16
17	00+	15	30+	45	05	35	15	45	05	25	45	15			17
18	00+	15		45		35	15			15	45				18
19		15		45		35	15			15	45				19
20		15		45E		35	15			15	45				20
21				45E		35	15				45				21
22				45E		35					35				22
23				45E		35P									23
00				45EP							35				00
01				45EP		20P									01
02				45EP											02

LA

LINJA	4	6	7	19	4	6	7	19	LINJA
tunnit	minuutit								tunnit
05									05
06		35							06
07	45	35		25					07
08	45	35		25					08
09	45	35	15	25	45		15	25	09
10	15 45	35	15	25	45		15	25	10
11	15 45	35	15	25	45	35	15	25	11
12	15 45	35	15	25	45	35	15	25	12
13	15 45	35	15	25	45	35	15	25	13
14	15 45	35	15	25	45	35	15	25	14
15	15 45	35	15	25	45	35	15	25	15
16	45	35	15	25	45	35	15	25	16
17	45	35		25	45	35		25	17
18	45	35		25	45	35		25	18
19	45	35		25	45	35		25	19
20	45E	35		25	45EX	35		25	20
21	45E	35		25	45EX	35		25	21
22	45E	35		35	45EX	35		35	22
23	45E	35			45EX	35X			23
00	45E			35	45EX			35	00
01	45E	20			45EX	20X			01
02	45E				45EX				02

SU

P = perjantaina ja arkipyhän aattona
X = vuoro ajetaan vain 1.11. ja 6.12.03 sekä 1.5.04
E = vuoro lopettaa keskustaan
\+ = vuoro ajetaan ajalla 29.9.03 - 30.4.04

YHDISTELMÄ
KESKUSTA - LINNANMAA

linja **4** Otto Karhin pysäkiltä
6 Otto Karhin pysäkiltä
7 Kuvernöörin pysäkiltä
19 Otto Karhin pysäkiltä
22 Otto Karhin pysäkiltä
23 Otto Karhin pysäkiltä
24 Otto Karhin pysäkiltä

LINJA	4				6		7		19			22	23	24
tunnit	minuutit													
	MA - PE													
06	05		35			55				30		55	45	
07	05		35	50	25	55	05	35	10	30	45		45	35
08	05	20+	35	50+	25	55	05	35	10	30	50	00	45	35
09	05	20+	35	50+	25	55	05	35	10	30	50	00		35
10	05	20+	35	50+	25	55	05	35	10	30	50	00		35
11	05	20+	35	50+	25	55	05	35	10	30	50	00		35
12	05	20+	35	50+	25	55	05	35	10	30	50	00		35
13	05	20+	35	50+	25	55	05	35	10	30	50	00		35
14	05	20+	35	50+	25	55	05	35	10	30	50	00	45	35
15	05	20+	35	50+	25	55	05	35	10	30	50	00	45	35
16	05	20+	35	50+	25	55	05	35	10	30	50	00	45	35
17	05	20+	35	50+	25	55	05	35	10		40	00		35
18	05	20+	35			55	05	35	10		40			
19	05		35			55		35	10		40			
20	05		35			55		35	10		40			
21	05					55		35	10		40			
22	05					55			10					
23	05								10					
00	05					45P			10					
01	05P										40			
02	05P				30P									
03	05P													

LINJA	4	6	7	19	4	6	7	19	LINJA
minuutit									tunnit
	LA				SU				
06									06
07			55						07
08	05	35	55	50					08
09	05		55	35 50			35		09
10	05 35		55	35 50		55	35	50	10
11	05 35		55	35 50	10	55	35	50	11
12	05 35		55	35 50	10	55	35	50	12
13	05 35		55	35 50	10	55	35	50	13
14	05 35		55	35 50	10	55	35	50	14
15	05 35		55	35 50	10	55	35	50	15
16	05		55	35 50	10	55	35	50	16
17	05		55	50	10	55		50	17
18	05		55	50	10	55		50	18
19	05		55	50	10	55		50	19
20	05		55	50	10	55		50	20
21	05		55	50	10	55		50	21
22	05		55		05X	55			22
23	05			10	05X			10	23
00	05		45	10	05X	45X		10	00
01	05			40	05X			40	01
02	05		30		05X	30X			02
03	05				05X				03

P = perjantaina ja arkipyhän aattona
X = vuoro ajetaan vain 1.11. ja 6.12.03 sekä 1.5.04
\+ = vuoro ajetaan ajalla 29.9.03 - 30.4.04