

## ACADEMIC PORTFOLIO

### 1. Education and training

Name: Kari-Pekka ENQVIST

Date and place of birth: February 16, 1954, Lahti, Finland

Current position: Academy of Finland Research Professor 2010-; Professor of Cosmology, Department of Physical Sciences, University of Helsinki 2001-; Theory Programme Director, Helsinki Institute of Physics, 2000-2010.

Education and training: graduated from the University of Helsinki, Finland, April 1980, majoring in physics with minors in theoretical physics, mathematics, astronomy and philosophy (additional degrees in psychology and social psychology); Licentiate of Philosophy (a postgraduate intermediate degree), May 1981, at the University of Helsinki; Ph.D. in Elementary Particle Physics at the University of Helsinki, May 1983 (supervisor prof. Masud Chaichian, University of Helsinki).

Previous professional appointments:

- 1978-1983 Research assistant at the Department of High Energy Physics and the Research Institute for Theoretical Physics, University of Helsinki, Finland.
- 1984-1986 Research fellow at CERN, TH division, Geneva, Switzerland (24 months).
- 1986-1987 Research fellow at the Physics Department, University of Wisconsin, Madison, USA (12 months).
- 1987-1990 Senior research fellow at the Research Institute for Theoretical Physics, University of Helsinki (22 months).
- 1988-1989 Acting associate professor at the Department of Theoretical Physics, University of Helsinki (12 months).
- 1990-1994 Assistant professor, Nordita, Copenhagen, Denmark (49 months).
- 1995-1996 Acting professor, Department of Physics, University of Helsinki (17 months).
- 1996-2001 Senior research fellow, Academy of Finland (60 months).
- 2001- Professor of cosmology, Department of Physical Sciences, University of Helsinki
- 2010-2014 Academy of Finland Research Professor (60 months)

Docent of Theoretical Physics at the University of Helsinki, December 1984; Research Associate, Dept. of Theoretical Physics, University of Helsinki, 1985-1995; Senior Research Associate, Theory Division, Physics Department, University of Helsinki, 1996-2001

### 2. Research and researcher training

## Publications:

- 250 scientific publications (in English); 10800 citations in the SLAC INSPIRE database with Hirsch  $h=57$ .
- About 200, mainly popular science articles (in Finnish), including the books: Tyhjästä syntynyt (WSOY 1994, with J. Maalampi), short listed for the annual Tieto-Finlandia Award; Näkymätön todellisuus (WSOY 1996; winner of the Lauri Jäntti foundation award; short listed for the annual Tieto-Finlandia Award); Olemisen porteilla (WSOY 1998; winner of the annual Tieto-Finlandia Award); Valo ja varjo (WSOY 2000); Kosmoksen hahmo (WSOY 2003); Vien Rucolan takaisin (WSOY 2004); Suhteellisuusteoriaa runoilijoille (WSOY 2005); Monimutkaisuus (WSOY 2007); Kuoleman ja unohtamisen aikakirjat (WSOY 2009); Johdatus suhteellisuusteoriaan (URSA 2011; a textbook); Uskomaton matka uskovien maailmaan (WSOY 2012); Ensimmäinen sekunti. Silminnäkijän kertomus (WSOY 2014); Ainoa mikä jää. Keskusteluja siitä, mikä on tärkeää (WSOY 2017, together with Janne Saarikivi).

## Recent scientific activities

- Co-Investigator in the Low Frequency Instrument Consortium of the ESA Planck Surveyor Mission 1998-2004; in the Finnish Planck Steering Group, 2000-2004
- In the International Advisory Committee of the Cosmo series since 2000.
- Organiser of: LFI Consortium Meeting (Saariselkä 2000); Cosmo01 (Rovaniemi 2001); Strong and Electroweak Matter (Helsinki 2004); 4th NorFA Network Meeting on Particle Physics and Cosmology (Helsinki 2004); Astroparticle physics and cosmology workshop, Galileo Galilei Institute (Florence, Italy, 2006); Finnish-Japanese workshop on particle cosmology (Helsinki 2007); workshop Cosmological Perturbations Post-Planck (Helsinki 2013).
- Advisor to the Research Council of Norway; Advisor to the Particle Physics and Astronomy Research Council, UK; Advisor to the Academy of Finland; Advisor to the Netherlands Organization for Scientific Research; Advisor to the Swedish Research Council
- Member of the Nordic Networks The Standard Model in Extreme Environments 1997-1999; Theoretical Particle Physics and Cosmology 2002-2004; Nordic Project on Astroparticle Physics and Cosmology 2002-2004; associated contractor for the EU Human capital and mobility network Theoretical astroparticle physics (1993-1996); coordinator of the EU Training and Mobility programme A Critical Investigation of Electroweak Baryogenesis Models (1996-1998); Helsinki node coordinator of the EU 5th framework programme Supersymmetry and the early universe (2000-2004); Helsinki node coordinator of the EU 6th framework programme UniverseNet (2006-2010); member of Nordsforsk network Particle Physics and Cosmology (2009-2010)
- Chairman for the Nordita Subatomic Physics Committee, 1999-2001; Member of Nordita Board (reserve), 2002-2008; member of the ESA Fundamental Physics Advisory Board, 2001-2003; member of European Space Science Committee of ESF, 2004-2006.
- member of the Finnish Society of Sciences and Letters, 2002-; member of Finnish Academy of Science and Letters, 2004-;
- Referee for Physical Review Letters; Physical Review D; JCAP; JHEP

## Major research grants:

EU TMR 1996-1998 (98 k€); Particle cosmology 1997-1999 (Academy of Finland, 90 k€); Temperature fluctuations of the microwave sky, 2000-2001 (Academy of Finland, 168 k€); EU 5th FP 2001-2003 (150 k€); Planck Surveyor Physics 2001-2004 (Academy of Finland, 260 k€); Planck Surveyor Physics 2004-2007 (Academy of Finland, 190 k€); Japan-Finland Core Programme 2006-2008 (Academy of Finland 160 k€); Theoretical particle cosmology 2006 (Academy of Finland, 104 k€); Primordial perturbations and dark energy 2007-2010 (Academy of Finland, 171 k€); EU 6th framework programme UniverseNet (281 k€); Particle cosmology 2010-2014 (Academy of Finland, 686 k€).

Research awards, honours, stipends: State Prize for Dissemination of Information (Valtion Tiedonjulkistamispalkinto) 1995, 2004; Lauri Jäntti Foundation Award 1997; The Magnus Ehrnrooth Foundation Physics Award 1997; Tieto-Finlandia National Book Award 1999; WSOY foundation prize 2004; Popular book writer award 2005; Helsinki University J. V. Snellman price 2007; Socrates-prize of the Finnish Sceptical Society 2009; the Annual Mensa-award 2012.

### 3. Teaching

#### PhD dissertations:

· Opponent for: Juha Peltoniemi (Helsinki University); September 1991; Stefan Åminneborg (Stockholm University, Sweden) April 1995; David Persson (Chalmers University of Technology, Göteborg, Sweden) November 1996; Tarja Kallio-Tamminen (Philosophy, Helsinki University), June 2004; Håvard Alnes (University of Oslo), November 2006; Anders Basbøl (University of Aarhus), November 2008

· Supervisor of: Kimmo Kainulainen (PhD 1991); Jarkko Ahonen (PhD 1998), Syksy Räsänen (PhD 2002); Antti Sorri (PhD 2002); Asko Jokinen (PhD 2003); Martin Sloth (PhD 2003); Jussi Väliiita (PhD 2004); Antti Väihkönen (PhD 2006); Sami Nurmi (PhD 2008); Diana Battefeld (PhD 2008); Vesa Muhonen (PhD 2008); Teppo Mattsson (PhD 2009); Andrea Ferrantelli (PhD 2010); Lotta Methner (PhD 2010); Vappu Reijonen (PhD 2010); Olli Taanila (PhD 2010); Maria Mattson (PhD 2012); Samuel Flender (PhD 2014); Tuukka Meriniemi (PhD 2014); Stanislav Rusak (PhD 2015); Tommi Tenkanen (PhD 2016); Hannu Nyrhinen (PhD 2017);

· Referee for 6 PhD thesis

#### Student training:

· Tutoring of both undergraduate and graduate students; organiser of student summer schools

· Supervised 22 MSc theses

· Number of graduate students under current supervision: 3.

· Lecture courses given: Many Body Physics (MOKA); Introduction to the theory of relativity; Fysiikkaa runoilijoille (Physics for poets); Applied Field Theory; Supersymmetry; Superstring phenomenology; Quantum Physics I; Introduction to Particle Physics; Cosmology

· Student feedback: generally good to excellent. Example from Physics for Poets: "The enlightening effect of the course is comparable to the music by the Beatles."

Outreach activities: Extensive outreach: talks to the public at large; frequent TV and radio appearances.

### 4. Other activities

Outside university: Vice president of the Finnish Sceptical Society SKEPSIS 1996-1998; board member of the Finnish Amateur Astronomical Society URSA 1999-2002; subeditor of the Finnish Physical Society Journal Arkhimedes 1997-2001; organizer of the exhibition "Mahdollisuuksia", Lasipalatsi, Helsinki, 13.1.-7.2.1999; member of the Finnish Unesco Committee (Section of Natural Sciences) 1999-2001; member of the board of the Finnish Science Center Heureka 2000-2002; in the selection board for the Vuoden Tietokirja Book prize, 2002; in the selection board for the Tieto-Finlandia Book prize, 2002; member of the YLE Teema-television channel scientific advisory board 2002-2003; columnist at Tekniikka & Talous, 2002-2006; columnist at Suomen Lääkärilehti 2007-2009; columnist at GEO-lehti 2010-2013; columnist at Etelä-Suomen Sanomat (2016-); columnist at Finnish Broadcasting Company YLE (2017-)

Within university: Member of University teaching technology prize board 2003-2006; columnist at the Helsinki University

journal Yliopisto 1999-2000; at the Studia Generalia advisory board 2011-2013.