

**Kari Rummukainen****CV****September 14, 2022**

Full Name: Kari Olavi Rummukainen

Date of birth: January 14, 1962, Finnish citizen

**Education:** MSc in theoretical physics, University of Helsinki, September 1987  
 PhD in theoretical physics, University of Helsinki, September 1990  
 Docent in theoretical physics, University of Helsinki, January 1994.

**Present Position:**

Academy Professor, Academy of Finland (from 1/2019)  
 Professor of theoretical physics, Department of Physics (from 7/2009)  
 Director, Division of Particle Physics and Astrophysics (PAP) (from 1/2018)  
 Theory programme leader, Helsinki Institute of Physics (from 1/2011)  
 University of Helsinki

**Previous professional appointments:**

- Professor of theoretical physics, University of Oulu, 8/2003 – 7/2009
- Staff member, CERN Theory Division, 8/2003 – 7/2006
- Senior Lecturer, University of Helsinki, Finland, 1/2002 – 7/2003
- Assistant Professor, Nordita, 10/1997 – 8/2002
- European Union Research Fellow, Bielefeld University, Germany, 10/1996 – 9/1997
- Postdoctoral scientist, Indiana University, 10/1993 – 9/1996
- Research Fellow, Theory Division, CERN, 10/1991 – 9/1993

**Academic and scientific administrative positions**

- Scientific advisory board member, Collaborative research center CRC-TR211 "Strong-interaction matter under extreme conditions", Germany, 2018→
- NORDITA board member 2019 →
- Theoretical and Computational Methods master program leader, 2016 → 2018
- Inspector, Karelian Student Nation, 2013→
- Finnish representative of ECFA (European committee for future accelerators), 2011→ 2019
- Theory programme leader, Helsinki Institute of Physics, 2011→
- Theoretical physics teaching unit leader, University of Helsinki, 2010–2016
- Vice department head, Department of Physics, University of Oulu, 2008–2009
- Head of the board for the development of the teaching program, Department of Physics, University of Oulu, 2008–2009
- Towards LAGUNA, member of the steering group, 2013–2014
- LAGUNA Pro, member of the steering board, 2011–2014
- Oulu Southern Institute, member of the steering board, 2007–2009
- Center of the Underground Physics, Pyhäsalmi, member of the steering board, 2006→

**Major individual research grants**

- Academy professor position and research project *Particle cosmology and gravitational waves*, Academy of Finland, 2019–2023, 1 722 610€.
- Support for *LISA cosmology working group meeting 2018*, Magnus Ehrnrooth foundation, 7000€.
- Research project *BSM physics and primordial gravitational waves*, Academy of Finland, 2017–2021, 849 000€.
- Visitor grant for Prof. Mikko Laine, University of Bern, Switzerland, 1.7–31.12.2015, Väisälä fund in Finnish Academy of Sciences and Letters.
- Research project *Computational particle cosmology*, Academy of Finland, 2013–2017, 773 168 €.

- Professor pool research grant, for sabbatical leave, 8/2012 – 7/2013, 25 000 €.
- Research project *New physics on the lattice in the LHC era*, Academy of Finland, 2010–2013, 677 000 €.
- Research school collaborative grant *Particle Physics and Cosmology* (PACO), 2009–2011. Collaborative PhD training grant between Bielefeld and Helsinki, 66 620 €.
- Research project *Simulations of hot QCD*, Academy of Finland, 2007–2009, 234 000 €.
- Visitor grant for Prof. Mikko Laine, 1.3.2008–31.9.2008, Academy of Finland, 19 200 €.
- Research project *Standard Model in extreme environments*, Academy of Finland, 2004–2006, 120 000 €.
- 6 research grants for PhD students in my group, from private science foundations, 2003–2016

#### *International scientific computing grants*

- PRACE Tier-0 grant 2015-16: *Gravitational waves from early universe phase transitions*
- PRACE Tier-0 grant 2013-14: *Conformal window on the lattice*.
- DEISA Extreme Computing initiative 2009: *TecLat*, Technicolor on the lattice.
- DEISA Extreme Computing initiative 2007: HDM, hot and dense matter.

#### **Thesis advisor**

*PhD students advised:* 10 PhD theses 2008–2021

Lauri Niemi, Helsinki 2021; Sara Tähtinen, Helsinki, 2018; Viljami Leino, Helsinki, 2018 Michela D’Onofrio, Helsinki, 2015; Tommi Markkanen, Helsinki, 2014; Anne Mykkänen, Helsinki, 2013; Jarno Rantaharju, Helsinki, 2012; Janne Kuokkanen, Oulu, 2011; Petri Mutka, Oulu, 2009; Ari Hietanen, Helsinki, 2008

*Number of current PhD students:* 4

*MSc theses:* 22 theses 2000–2021

#### **Scientific expert tasks**

*Faculty position evaluation board membership*

15 memberships for faculty position evaluation boards 2007–21.

*Review of scientific grant applications:*

- 91 international grant applications reviewed 2000–2022
- Review of 45 supercomputing applications: JSC, PRACE Tier-0 and Tier-1, UK Dirac, US DOE Exascale, DOE INCITE, EuroHPC

*International conference advisory board membership:*

- Conference series “Strong and Electroweak Matter”, 1998–2020
- International conference “Lattice 2013–17”
- Conference “Extreme QCD 2013–16”

*PhD examiner:*

- Paula Perez Rubio, Universidad Autonoma de Madrid (UAM), 1.9.2010
- Fatih Tekin, Humboldt University, Berlin, Germany, 8.9.2010.
- Liam Keegan, University of Edinburgh, 28.6.2011
- Dirk Hesse, Humboldt University, 14.6.2012
- Ben Hoerz, Trinity College Dublin, 2.11.2016
- Felix Stollenwerk, Humboldt University, Berlin, Germany, 10.1.2017
- Martin Hansen, University of Southern Denmark, Odense, 12.4.2018
- Ilkka Ruokosenmäki, “Real Time Path Integral Methods for Quantum Particles” Tampere University, 29.11.2019

*Doctoral thesis pre-examination:* 14 theses, 2002–19

### **Other positions of trust**

- Kenneth G. Wilson Lattice Award committee membership, 2020; chair, 2021.

### **Conference organisation**

Organized 27 international workshops and conferences 1998–2022, as a main organizer or member of the organization committee.

### **Scientific networks**

Member of 8 international scientific networks 2000-2020.

### **Membership in scientific societies**

Finnish Physical Society, European Physical Society

Finnish Academy of Science and Letters

### **Prizes**

Finnish Academy of Sciences and Letters: 2006 Väisälä Prize.

Best teacher prize, Department of Physics, 2002 and 2011.

### **Citation record:**

- 207 scientific publications (9/2022)
- in inSPIRE database 11 723 citations, Hirsch h-index 57. <http://inspirehep.net/author/K.Rummukainen.1/>
- in Google scholar database, 13 797 citations, Hirsch h-index 59.
- in inSPIRE, 1 paper with more than 500 citations; 34 papers with more than 100.