

Kari Rummukainen

CV

September 9, 2020

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 "Strong-interaction matter under extreme conditions", 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 research project *Particle cosmology and gravitational waves*, Academy of Finland, 2019–2021, 658 280 €.
- 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: 9 PhD theses 2008–2018

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: 21 theses 2000–2018

Scientific expert tasks

Faculty position evaluation board membership

15 memberships for faculty position evaluation boards 2007–20.

Review of scientific grant applications:

- 73 international grant applications reviewed 2000–2019

International conference advisory board membership:

- Conference series “Strong and Electroweak Matter”, 1998–2018
- 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, 2002–18

Conference organisation

1. Chair, symposium “Hot non-perturbative particle physics”, Copenhagen, April 24–25, 1998.
2. Chair, conference “Strong and Electroweak Matter ’98”, Copenhagen, December 2–5 1998.
3. Co-organizer of the PhD school “Nordic winter school on particle physics and cosmology”, Gausdal, Norway, January 2–8 1999.
4. Convener of the session “Non-perturbative physics” in the International Europhysics conference HEP99, Tampere, Finland, 15-21 July 1999.
5. Chair, symposium “Hot non-perturbative particle physics II”, Copenhagen, Oct. 15–16 1999.
6. Co-organizer of the 23rd Triangle Meeting, 18–22 June 2000, Copenhagen.
7. Chair, symposium “Particle physics at high temperatures”, Oct. 28 2000, Trondheim, Norway.
8. Main organizer of the PhD school “2nd Nordic winter school on particle physics and cosmology”, Gausdal, Norway, January 6–12 2001.
9. Co-organizer, meeting “Theoretical Particle Physics and Cosmology,” Copenhagen, Denmark, January 25–26 2002.
10. Main organizer of the PhD school “3rd winter school on particle physics and cosmology”, Gausdal, Norway, January 4–10 2003.
11. Chair, conference “Strong and Electroweak Matter 2004”, Helsinki, June 16–19 2004.
12. Convener of the session “Non-perturbative field theory”, HEPP2005, EPS international high-energy particle physics conference, Lisbon, Portugal 21–27 July 2005.
13. Co-organizer of the “15th Nordic meeting on intermediate and high-energy nuclear physics”, Gräftavallen, Sweden, January 4–9 2005.
14. Chair, 20th Nordic particle physics “Spaating meeting”, Spaating, Norway, January 2–7 2008.
15. Chair, “Workshop on hot and dense QCD”, Oulu, Finland, June 26-28, 2008.
16. Co-chair, “NORDITA Workshop on Electroweak baryogenesis”, Nordita, Stockholm, June 17-July 31 2009.
17. Chair, PhD school on “Physics of strongly interacting field theories” University of Helsinki, Finland, October 25-29, 2010.
18. “Physics Days 2011”, 29–31.3 2011, Helsinki. Member of the LOC.
19. “Nordic winter school on particle physics and cosmology”, Gausdal, Norway, January 2–7 2013.
20. Workshop “Holographic Methods for Strongly Coupled Systems”, 4–8.3.2013
21. Workshop “Enqfest – 30 years of cosmology”, Helsinki, Finland, May 30-31, 2014
22. Workshop “Keijofest”, Helsinki, Finland, Jan 7, 2015
23. Workshop “Lattice Gauge Theory Simulations Beyond the Standard Model of Particle Physics”, Tel Aviv, Israel, June 22-26 2015.
24. Workshop “Fire and Ice”, Saariselkä, Finland, 3–7.4.2018.
25. LISA Cosmology Working Group meeting, 11-15.6.2018, Helsinki
26. LISA Day, 27.2.2020, Helsinki

Scientific networks and projects

1. LAGUNA-LBNO, EU FP7 Collaborative project, 2011-2014, Helsinki node coordinator
2. Leader, Finnish-German researcher training program on particle physics and cosmology, 2009 – 2011
3. EU I3 network *Hadron physics 2*, 2009 – 2011.
4. Nordforsk network *Particle physics and cosmology – two sides of one coin*, 2008 – 2011
5. NorFA project *Theoretical Particle Physics and Cosmology*, 2002 – 2006.
6. Nordic project “Hot non-perturbative particle physics”, 1998 – 2000, funded by NORDITA.
7. EU TMR research network “Electron Scattering Off Confined Partons” 1999 – 2002.
8. EU TMR research network “Finite temperature phase transitions in particle physics” 1997 – 2001.
9. Nordic research foundation project *Standard Model in Extreme Environments*, 1997 – 1999.

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:

- 195 scientific publications (9/2020)
- in inSPIRE database 9807 citations, Hirsch h-index 54. <http://inspirehep.net/author/K.Rummukainen.1/>
- in Google scholar database, 11643 citations, Hirsch h-index 57.
- in inSPIRE, 1 paper with more than 500 citations; 28 papers with more than 100.