

Curriculum Vitae

Name	Martti Raidal
Date of birth	26.02.1968
Phone	5164854
E-mail	martti.raidal@cern.ch
Additional info	Married, two children
Career	
Institution and position held	1995 - ... National Institute of Chemical Physics and Biophysics; Senior Researcher (1.00) 2009 - 2012 Estonian Academy of Sciences; Research Professor (1.00) 1995 - 2008 senior researcher at NICPB 1992-1995, assistant researcher, University of Helsinki 1996-1997, postdoc, University of Valencia 1998-1999, Humboldt Fellow, DESY, Hamburg 2000, postdoc, University of California, Riverside 2001-2003, EU MC Fellow, CERN, Geneva
Education	1992, diploma cum laude in physics, University of Tartu 1995, Ph.D. in theoretical physics, University of Helsinki
Administrative responsibilities	2008 - ... Member of the EGI Policy Board 2008 - ... Lepton physics convener of CERN study "Interplay between LHC and Flavour Physics" 2007 - ... Member of the Board of Estonian Grid, 2007 - ... Member of the Academic Advisory Board of the President of the Republic of Estonia 2006 - ... Member of the Executive Board of Baltic Grid 2006 - ... Member of the Research Review Board of CERN LHC CMS experiment 2006 - ... Expert for Estonian recurrent financing 2005 - ... Member of the Scientific Board of NICPB, 2004 - ... Coordinator of Estonian Team at CERN, 2011 - 2015 PI of the CoE "Dark Matter in (Astro)particle Physics and Cosmology"2 2006 - 2008 Lepton physics convener of CERN Wokshop "Flavour in the LHC Era"
Creative work	High energy physics experiments at LHC CMS, Phenomenology of particle physics and cosmology, Grid computing
Additional information	Referee for the journals Physical Review Letters, Physical Review D, Physics Letters B, Nuclear Physics B, Journal of High Energy Physics

Research activity

Degree information	Martti Raidal, Doctor's Degree, 1995, Extended electroweak models and their tests in future colliders, University of Helsinki
Honours & Awards	2005, Yearly Award, Natural Sciences and Engineering - Martti Raidal; National Science Prize
Field of research	4. Natural Sciences and Engineering, 4.10. Physics and Technical Physics(High Energy Physics, Cosmology)
Current grants & projects	Scientific and educational cooperation with CERN 2008-2014 High Energy and Theoretical Physics WLCG – Worldwide LHC Computing Grid Teadusarvutus arvutipilves ja -võres Väikesemahulise teaduse infrastruktuuri kaasajastamine teadusteema SF0690030s09 raames Experimental high-energy physics Search for New Physics beyond the Standard Model and astrophysical implications Searching Physics Beyond the Standard Model in LHC and in Space Top quark physics and exotic searches with the CMS detector Dark Matter search using astrophysical sources Stückelberg Z' and scalar dark matter Astro particle physics and the Large Hadron Collider
Dissertations under supervision	Andres Tiko, PhD Student, (sup) Martti Raidal, Andrea Giammanco, Mario Kadastik, LHC CMS analyses, University of Tartu, Faculty of Science and Technology, Institute of Physics, University of Tartu Marion Murumaa, PhD Student, (sup) Andi Hektor, Martti Raidal, Pavel Suurvarik, Indirect cosmic signatures of Dark Matter, Tallinn University of Technology , Faculty of Science, Department of Physics, Chair of Theoretical Physics Joosep Pata, MA / MSc Student, (sup) Martti Raidal, Mario Kadastik, Andrea Giammanco, Measurement of the single top t-channel polarization at CMS, University of Tartu
Dissertations supervised	Liis Rebane, Doctor's Degree, 2012, (sup) Alessandro Strumia, Martti Raidal, Measurement of the W- >tau nu cross section and a search for a doubly charged Higgs boson decaying to tau-leptons with the CMS detector, University of Tartu Andi Hektor, Doctor's Degree, 2008, (sup) Martti Raidal, Neutrino physics beyond the Standard Model, University of Tartu, Faculty of Science and Technology Kristjan Kannike, Doctor's Degree, 2008, (sup) Martti Raidal, Rein Saar, Implications of Neutrino Masses, University of Tartu Mait Müntel, Doctor's Degree, 2008, (sup) Martti Raidal, DETECTION OF DOUBLY CHARGED HIGGS BOSON IN THE CMS DETECTOR, University of Tartu Mario Kadastik, Doctor's Degree, 2008, (sup) Martti Raidal, Rein-Karl Loide, Doubly charged Higgs boson decays and implications on neutrino physics, Tallinn University of Technology , Faculty of Science, Department of Physics

Kristjan Kannike, Master's Degree, 2005, (sup) Martti Raidal, Running of Low-Energy Neutrino Masses and Mixing Angles in the Minimal Supersymmetric Standard Model, University of Tartu

Mario Kadastik, Master's Degree, 2005, (sup) Martti Raidal, Doubly charged Higgs boson decay to muons at the LHC, Tallinn University of Technology

Siim Ainsaar, Master's Degree, 2011, (sup) Martti Raidal, Fermionikondensaat tumeainena (Fermion condensate as dark matter), University of Tartu, Faculty of Science and Technology, Institute of Physics, University of Tartu

Oleg Košik, Master's Degree, 2009, (sup) Kristjan Kannike, Martti Raidal, Production of doubly charged Higgs boson in electron-positron collisions at linear collider, University of Tartu

Additional information

Ph.D.
University of Helsinki, 1995

Publications

Hektor, Andi; Raidal, Martti; Tempel, Elmo (2013). Evidence for indirect detection of dark matter from galaxy clusters in Fermi gamma-ray data. *The Astrophysical Journal Letters*, 762, L22

Bélanger, Genevieve; Kannike, Kristjan; Pukhov, Alexander; Raidal, Martti (2012). Impact of semi-annihilations on dark matter phenomenology - an example of Z_N symmetric scalar dark matter . *Journal of Cosmology and Astroparticle Physics*, 1204, 010

Camilo, Carillo; Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al. (CMS Collaboration) (2012). The CMS RPC project, results from 2009 cosmic-ray data. *Nuclear Instruments and Methods in Physics Research A*, S19

Gabrielli E., Giammanco A., Racioppi A., Raidal M. (2012). Effective axial-vector coupling of the gluon and top-quark charge asymmetry at the LHC., 2012, 163 - 172.

Gabrielli, Emidio; Kannike, Kristjan; Mele, Barbara; Racioppi, Antonio; Raidal, Martti (2012). Fermiophobic Higgs boson and supersymmetry. *Physical Review D*, 86(055014), 1 - 15.

Gabrielli, Emidio; Mele, Barbara, Raidal, Martti (2012). Has a fermiophobic Higgs boson been detected at the LHC ? *Physics Letters B*, 716, 322 - 325. [forthcoming]

Gabrielli, Emidio; Racioppi, Antonio; Raidal, Martti; Veermae, Hardi (2012). Implications of effective axial-vector coupling of gluon for $t\bar{t}$ spin polarizations at the LHC. *Physical Review D*, 1 - 25. [forthcoming]

Gabrielli, Emidio; Racioppi, Antonio; Raidal, Martti (2012). Implications of the effective axial-vector coupling of gluon on top-quark charge asymmetry at the LHC. *Physical Review D*, 85 (074021), 1 - 12.

Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Centrality dependence of dihadron correlations and azimuthal anisotropy harmonics in PbPb collisions at $\sqrt{s_{[NN]}} = 2.76$ TeV. *Eur.Phys.J.*, C72, 2012

Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Combined results of searches for the standard model Higgs boson in pp collisions at $\sqrt{s} = 7$ TeV. *Phys.Lett.*, B710, 26-48

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- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Measurement of the cross section for production of b b-bar X decaying to muons in pp collisions at $\sqrt{s}=7$ TeV. JHEP, 1206, 110
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Measurement of the inclusive production cross sections for forward jets and for dijet events with one forward and one central jet in pp collisions at $\sqrt{s} = 7$ TeV. JHEP, 1206, 036
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Measurement of the Z/gamma*jet cross section in pp collisions at 7 TeV. JHEP, 1206, 126
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for a Higgs boson in the decay channel H to ZZ(*) to q qbar l-l in pp collisions at $\sqrt{s} = 7$ TeV. JHEP, 1204, 036
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for large extra dimensions in dimuon and dielectron events in pp collisions at $\sqrt{s} = 7$ TeV. Phys.Lett., B711, 15-34
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for microscopic black holes in pp collisions at \sqrt{s} = 7 TeV. JHEP, 1204, 061
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for neutral Higgs bosons decaying to tau pairs in pp collisions at $\sqrt{s}=7$ TeV. Phys.Lett., B713, 68-90
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for quark compositeness in dijet angular distributions from pp collisions at $\sqrt{s} = 7$ TeV. JHEP, 1205, 055
- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for the standard model Higgs boson decaying into two photons in pp collisions at $\sqrt{s}=7$ TeV. Phys.Lett., B710, 403-425
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- Giammanco, Andrea; Hektor, Andi; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for the standard model Higgs boson in the H to ZZ to ll tau tau decay channel in pp collisions at $\sqrt{s}=7$ TeV. *JHEP*, 1203, 081
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- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Observation of a new Xi(b) baryon}. Phys.Rev.Lett., 108, 252002
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- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for a light charged Higgs boson in top quark decays in pp collisions at $\sqrt{s} = 7$ TeV. JHEP, 1207, 143
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- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for anomalous production of multilepton events in pp collisions at $\sqrt{s}=7$ TeV. JHEP, 1206, 169
- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for anomalous t-t-bar production in the highly-boosted all-hadronic final state. JHEP, 1209, 029
- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for Dark Matter and Large Extra Dimensions in pp Collisions Yielding a Photon and Missing Transverse Energy. Phys.Rev.Lett., 108, 261803
- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for heavy bottom-like quarks in 4.9 inverse femtobarns of pp collisions at $\sqrt{s} = 7$ TeV. JHEP, 1205, 123

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- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for heavy top-like quark pair production in the dilepton final state in pp collisions at $\sqrt{s} = 7$ TeV. Phys.Lett., B716, 103-121
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- Giammanco, Andrea; Kadastik, Mario; Müntel, Mait; Raidal, Martti; Rebane, Liis; Tiko, Andres et al (CMS Collaboration) (2012). Search for new physics in events with same-sign dileptons and b-tagged jets in pp collisions at $\sqrt{s} = 7$ TeV. JHEP, 1208, 110
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