

Prof. Dr. Benjamin Koch

CONTACT

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RESEARCH INTERESTS

From particle- to gravitational physics and back

Physics beyond the standard model
Weakly interacting particles
Renormalization group and asymptotic safety

WORKING EXPERIENCE

Since 2015, Associate professor

At: Pontificia Universidad Católica de Chile, Santiago, Chile

2012-2015, Assistant professor

At: Pontificia Universidad Católica de Chile, Santiago, Chile

2008-2011, Postdoc

At: Pontificia Universidad Católica de Chile, Santiago, Chile

2007-2008, Postdoc

At: Institute of Theoretical Physics in Frankfurt, Germany

2004-2007, Teaching assistant

At: Institute of Theoretical Physics in Frankfurt, Germany

2001, Internship

On: Simulation and construction of a water Cherenkov detector

At: Max Planck Institute for Physics in Munich, Germany

1996-1997, Civilian service

At: Lebenshilfe Nördlingen, Germany

TEACHING
EXPERIENCE

Supervision of undergraduate and postgraduate students

2015-bachelor	Javier Felipe Nunez on “Spinning massive particles in cosmology”
2015-master	Paola Rioseco on “Black holes and running couplings”
2015-internship	Victor Munoz, on “The path integral formulation of quantum mechanics”
2014-master	Esteban Castillo on “QFT in time-dependent backgrounds”
2014-bachelor	Jose Taulis on “Black holes as particle accelerators”
2014-bachelor	Hernan Cabrera on “Geoneutrinos at the ANDES underground laboratory”
2014-master	Ignacio Reyes on “Differentiable-path integrals in quantum mechanics”
2014-internship	Alejandro Contreras on “How to throw a basketball?”
2013-internship	David Valenzuela on “Black hole analog in soap film?”
2013-internship	Antonio Henriquez on “Symmetries in physics”
2012-internship	Cristobal Armaza on “The spinning top in general relativity”

Lecturer and professor at Pontificia Universidad Católica

2015-II	Electricity and Magnetism for Physicists and Engineers
2015-I	Quantum Field Theory II
2014-II	Electromagnetism
	Thermodynamics for Engineers
2014-I	Advanced Quantum Mechanics
	Introduction to Particle Physics
2013-II	Modern Physics
2013-I	General Physics for College
	Modern Physics
2012-II	Electricity and Magnetism for Engineers
2012-I	General Physics for College
2011-II	Electricity and Magnetism
2011-I	General Physics for Engineers
2010-II	Introduction to Particle Physics
2010-I	Introduction to Physics
2009-II	Introduction to Physics
2009-I	Quantum Field Theory I
2008-II	Introduction to Particle Physics

Teaching assistant at University of Frankfurt

2007-I	Statistical Physics
2006-I	Quantum Mechanics I
2005-I	Elektrodynamics
2004-II	Theoretical Mechanics II
2004-I	Theoretical Mechanics I

GRANTS AND
PRICES

2014, Luksic grant for collaboration between University of Notre Dame and PUC

Organization a combined workshop and of the Chilean LHC Masterclasses 2015

2013, Honorable mentioned price, Karl Schwarzschild Meeting

Presentation on: Black hole solutions with running gravitational couplings

2012-2016, Principal investigator, Fondecyt Regular 1020360

Theory and Phenomenology at the Terascale

2012-2015, Senior researcher, Anillo ACT1102

Anillo Atlas Andino - High Energy Particle Physics

REVIEWING

Reviewing activity for the following journals

Physics Letters B
Foundations of Physics
European Physics Letters
Universe
European Physical Journal C

Reviewing activity for the following committees

Fondecyt Regular
Fondecyt Incerción

LANGUAGES

German: native language

English: fluently

Spanish: fluently

Latin: reading only

EDUCATION

2007, PhD

Title: Black hole production and graviton emission
in models with large extra dimensions
At: Frankfurt International Graduate School of Science and
Institute of Theoretical Physics in Frankfurt, Germany

2003, Diploma

Title: Einschleifenrechnungen zur tiefinelastischen
Neutrino-Nukleon-Streuung im MSSM
At: Max Planck Institute for Theoretical Physics, and
Technical University Munich, Germany

2001, One semester of language study

At: Universidad de Complutense in Madrid, Spain

1996, School leaving examination (Abitur)

At: Theodor Heuss Gymnasium Nördlingen, Germany

OTHER INTERESTS Gymnastics, guitar, and hiking

Santiago, October 30, 2015