

# Curriculum vitae

## PERSONAL INFORMATION

Dr. Sahar Sahebdivan(i)

## WORK EXPERIENCE

Jan 2016–Present

### Guest researcher and adviser

Univ. of Vienna: Quantum Optics and Quantum Information group, Vienna (Austria)

Seminar course: Levitation in quantum physics, sensing and application, faculty of physics.  
Supervision and guidance of the bachelor dissertations.

Jan 2013–Jan 2016

### Researcher

Univ. of Vienna: Quantum Optics and Quantum Information, group of Prof. Aspelmeyer, Vienna (Austria)

Sep 2012–Mar 2015

### Researcher

Project QUEST, Univ. of St Andrews (United Kingdom)

Sep 2011–Feb 2012

### Visiting Researcher

Austrian Academy of Sciences, group of Prof. Zeilinger, Vienna (Austria)

2005–2006

### Lecturer

Institute for Astrophysics ADIB in association with Univ. of Isfahan, Iran (Iran)

Lecturing astrophysics and cosmology for amateur attendees and students.

## EDUCATION AND TRAINING

Nov 2009–Dec 2014

### PhD in Theoretical Physics

School of Physics & Astronomy, University of St Andrews, St Andrews (United Kingdom)

Thesis Title: *"Enigma of Imaging in the Maxwell Fisheye Medium"*, under supervision of Prof. Ulf Leonhardt.

Sep 2006–Dec 2008

### MSc in Theoretical Physics

Department of Physics, University of Isfahan, Isfahan (Iran)

Thesis Title: *"Mathematical Structure for Decoherence Theory in Berezin Deformation Quantisation Framework"* under supervision of Prof. Rasoul Roknizadeh.

Sep 2001–Dec 2005

### BSc in atomic and molecular physics/cosmology and gravitation Physics

Department of Physics, University of Isfahan, Isfahan (Iran)

Thesis Title: *"Causal Structure of Space-Time and Hawking Radiation in Black holes"* Under supervision of Dr. Bijan Sheikholeslami Sabzevari.

Sep 1997–May 2001

### High school Diploma in Mathematics and physics

Farzanegan High School, NODET (National Organization for Development of Exceptional Talents), Shiraz (Iran)

[https://en.wikipedia.org/wiki/National\\_Organization\\_for\\_Development\\_of\\_Exceptional\\_Talents](https://en.wikipedia.org/wiki/National_Organization_for_Development_of_Exceptional_Talents)

## ADDITIONAL INFORMATION

## Publications

- Yun Gui Ma, Sahar Sahebdivan, C K Ong, Tomáš Tyc and Ulf Leonhardt (2011). "Evidence for subwavelength imaging with positive refraction". New Journal of Physics, 13 033016.
- Ulf Leonhardt and Sahar Sahebdivan (2011). "Perfect imaging: they do not do it with mirrors". J. Opt. 13 024016.
- Yun Gui Ma, Sahar Sahebdivan, C K Ong, Tomáš Tyc and Ulf Leonhardt (2012). "Subwavelength imaging with materials of in-principle arbitrarily low index contrast". New J. Phys. 14 025001.
- Ulf Leonhardt, Sahar Sahebdivan and Tomáš Tyc: "Simple model for Perfect Imaging", Submitted.
- Ulf Leonhardt and Sahar Sahebdivan: "Theory of Maxwell's fish eye with mutually interacting sources and drains." Physical Review A 92, no. 5 (2015): 053848.
- R. Roknizadeh, A. Mousavi, S. Sahebdivan, S. Dehdashti: "On the using of the medium with variable optical axes as a curved space-time for light", Progress In Electromagnetics Research M, Vol. 49, 117–129, (2016).
- R. Roknizadeh, A. Mousavi, S. Sahebdivan: "Induced optical metric in the non-impedance-matched media, Accepted for publication in Journal of Optics (2016).

## Conferences

- Sahar Sahebdivan and Amir H. Sadeghi (July 2016) "*Superposition of Mass and Breakdown of Semiclassical Gravity*"; International School of Physics "Enrico Fermi", Varenna, Italy.
- Sahar Sahebdivan, (February 2016) "*Detectable gravitation properties of a quantum entity beyond the classical theory*"; Talk gave at: Forth Tux workshop on Quantum Gravity, Science village Tux, Tirol, Austria.
- Sahar Sahebdivan, (July 2015) "*Modification on the Schrödinger-Poisson Equation; Gravity of a quantum object*"; Talk gave at: Gravity in lab, meeting 2015, Benasque, Aragon, Spain.
- Sahar Sahebdivan (2013) "*Generalized Diffraction Theory on The Curved Manifolds*". Presented as a poster at: WE-Heraeus Physics School on Exploring the limits of the quantum superposition principle, 12 – 17 May, at the Physikzentrum Bad Honnef , Germany.
- Sahar Sahebdivan (2012). "*Perfect Imaging in the Fisheye Medium*". Presented as a poster at the 500 WE-Heraeus Seminar on Highlights of Quantum Optics, Physikzentrum, Bad Honnef, Germany, May 6th – 11th.
- Sahar Sahebdivan (2012)"*Does the Geometry change the Fundamental Limits?*" Presented as a poster at: Gordon Research Conference, Quantum Science, USA, August 12-17, 2012.
- Sahar Sahebdivan and Ulf Leonhardt (2011) "*Perfect Imaging With Positive Refractive Index Medium*", Presented as a talk at: 18th Central European Workshop on Quantum Optics, Madrid.
- Sahar Sahebdivan (2011) "*Transformation Optics and its Applications*", Presented as a talk at: 17th Iranian Conference on Optics and Photonics (ICOP2011), Mahan, Iran.
- Sahar Sahebdivan, R. Roknizadeh, (2008)"*Semigroup Approach to Decoherence Theory.*" Presented as a talk at: Third Workshop of Harmonic Analysis and Wavelets, Center of Excellence in Analysis on Algebraic Structures. Ferdousi University, Mashhad, Iran.

## Honours and awards

Scottish Overseas Research Students (SORS) scholarship award

## Outreach

British Royal Society's Summer Science Exhibition: 2011, 2012

## Guest talks/visitor

UC Berkeley, USA, 2012

South China Normal University, Guangzhou, China, 2013

Queens Mary's Collage, University of London 2013

## Symposia organizer

Workshop on Quantum Optics, University of Isfahan, Iran, 2011

PhysPhil Conference, St Andrews, UK, 2012

Contributions to the Community

Reviewer for scientific journals: PRL, PRA, Optics Express, etc.  
Mentoring and supervising students through their thesis.