



Curriculum Vitae Hossein Mos'hafi

PH.D. IN PHYSICS · COSMOLOGIST

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Personal

Born: 1986-07-15

Birth Place: TEHRAN-IRAN

Sex: MALE

Martial Status: SINGLE

Address: IBN-SINA LAB, DEPARTMENT OF PHYSICS, SHAHID BEHESHTI UNIVERSITY, G.C., EVIN, TEHRAN 19839, IRAN

Current Appointment

Part time Researcher 2017-PRESENT

Ibn-Sina Laboratory, Department of Physics, Shahid Beheshti University TEHRAN-IRAN

Education

IASBS (Institute for Advanced Studies in Basic Sciences)

Zanjan, IRAN

PH.D. IN PHYSICS, COSMOLOGY

2011 - 2017

» Thesis: Cosmological structure formation: an approach for investigating dark energy, dark matter and inflation

SBU (Shahid Beheshti University)

Tehran, IRAN

M.SC. IN PHYSICS, COSMOLOGY

2008 - 2011

» Thesis: Analysis of Cosmic Microwave Background Radiation Anisotropies

SUT (Sharif University of Technology)

Tehran, IRAN

B.SC. IN PHYSICS

2004 - 2008

Academic Experiences

Part time Researcher

Iran

SBU 2017-

» Ibn-Sina Lab, Physics Dept. SBU.

Research Assistant

Iran

SBU 2014-2017

» Under the supervision of Prof. Movahed, Physics Dept. SBU.

Research Assistant

Iran

IASBS 2011-2014

» Under the supervision of Prof. Haghi, Physics Dept. IASBS.

Research Assistant

Iran

SBU 2008-2011

» Under the supervision of Prof. Movahed, Physics Dept. SBU and IPM.

Instructor

SUFU UNIVERSITY

» "Astrophysics", for M.Sc. students at Sufu university

Iran
Winter 2014**Instructor**

HIGH SCHOOL

» "Galactic Dynamics", for high school students.

Iran
Winter 2013**Instructor**

YSC

» "Modern Astrophysics", for high school students.

Iran
Winter 2013**Instructor**

YSC

» "Introduction to Cosmology", for high school students.

Iran
Fall 2012**Teaching Assistant**

IASBS

» "Astrophysics II", Dr. Haghi, Physics Dept. IASBS.

Iran
Spring 2012**Teaching Assistant**

SBU

» "Fundamentals of Physics II", Prof. Movahed, Physics Dept. SBU.

Iran
Fall & Spring 2010**Teaching Assistant**

SBU

» "Thermodynamics", Prof. Seyed Allaei, Physics Dept. SBU.

Iran
Fall & Spring 2009**Teaching Assistant**

SBU

» "Fundamentals of Physics I", Prof. Seyed Allaei, Physics Dept. SBU.

Iran
Fall 2008**Member of Local Organization Committee**

IASBS

» 17th Meeting on Research in Astronomy.Iran
Spring 2013**Manager of Local Organization Committee**

IASBS

» 16th Meeting on Research in Astronomy.Iran
Spring 2012**Member of scientific committee**

PSI

» 18th annual high school students conference of Physics.Iran
Summer 2010**Member of national scientific committee**

YSC

» Astronomy and Astrophysics Olympiad in IRAN.

Iran
2009 - 2011**Member of Organization Committee**

PSI

» 17th Physics student meeting, PSI, Bonab, IRAN.Iran
Summer 2009**Referee**

PSI

» 17th annual high school students conference of Physics.Iran
2009

Student Supervision

Ph.D. Student

ADVISOR

Shahid Beheshti University

Feb. 2015-Nov. 2018

- » Behrang Mostaghel, "Correspondence Between Dynamical Dark Energy and Bulk Viscous Cosmology", Primary supervisor: Dr. S.M.S. Movahed.

Master Student

ADVISOR

University of Zanjan

Mar. 2012-Mar. 2014

- » Fatemeh Fehrest, "CMB power spectrum and parameter estimation using artificial neural networks", Primary supervisor: Dr. Mahdi Bazarghan

Research Interests

-  Cosmological Structure Formation
-  Dark Energy & Modified Gravity
-  Reionization & 21cm fluctuations
-  Non-Gaussianity effects on the CMB and LSS
-  Inflation and Early Universe
-  Observational constraints on theoretical models

Current Projects

- » H. Mos'hafi, R. Emami, "Structure formation in featured oscillatory inflationary models by using large scale simulations", in progress.
- » H. Mos'hafi, R. Emami, "Primordial Non-Gaussianity in 21-cm fluctuations", in progress.
- » H. Mos'hafi, S. Baghran, N. Khosravi, "Integrated Sachs-Wolfe effect in $\ddot{u}\Lambda$ CDM model", in progress.

Publications

- » H. Moshafi, R. Emami, "Structure Formation in the Featured Primordial Power Spectra", in preparation.
- » B. Mostaghel, H. Moshafi, S.M.S. Movahed, "The Integrated Sachs-Wolfe Effect in the Bulk-Viscous Dark Energy model", arXiv:1810.04856[astro-ph.CO], Monthly Notices of the Royal Astronomical Society, Volume 481, Issue 2, 1 December 2018.
- » B. Mostaghel, H. Moshafi, S.M.S. Movahed, "Non-minimal Derivative Coupling Scalar Field as a Bulk-Viscous Dark Energy", arXiv:1611.08196 [astro-ph.CO], Eur. Phys. J. C **77**, no. 8, 541 (2017)
- » N. Mirzatan, S. Khosravi, S. Baghran, & H. Moshafi, "Simultaneous effect of Modified Gravity and Primordial Non-Gaussianity in Large Scale Structure Observations", JCAP01(2014)019
- » B. Mostaghel, H. Moshafi, S.M.S. Movahed, "Viscous Dark Energy: A Proposal to Resolve the Tension Between Planck and Red- shift Space Distortion", accepted paper in National Physics Conference, Iran, Summer 2017.
- » B. Mostaghel, H. Moshafi, S.M.S. Movahed, "Footprints of Interaction of Viscous Dark Energy and Dark Matter on the Expansion History of the Universe", accepted paper in National Conference of Gravitation and Cosmology, Winter 2016, SBU, Iran.
- » H. Moshafi, A. Vafaei Sadr, S.M.S. Movahed, H. Haghi, "Two-point correlation function of Peaks in Planck data: Hemispherical Asymmetry", accepted paper in National Conference of Gravitation and Cosmology, Winter 2015, SUT, Iran.

- » H. Moshafi, S.M.S. Movahed, M. Zarei, "Search for local kink in the CMB power spectrum", poster presentation in Summer School on Cosmology at ICTP, Summer 2012, Trieste, Italy.

- » H. Moshafi, M. Zarei, & M. Sadegh Movahed, "Local features in CMB power spectrum", accepted paper in National Conference of Gravitation and Cosmology, Winter 2013, Iran.

- » M. Sadegh Movahed, B. Javanmardi, & H. Moshafi, "Cosmic string detection using peak - peak correlation function in CMB map", accepted paper in National Physics Conference, Iran, Summer 2011.

- » M. Sadegh Movahed, B. Javanmardi, & H. Moshafi, "Two-point correlation function of peaks in the cosmic microwave background radiation", accepted paper in 15th meeting on Research Astronomy, Zanjan, Iran, 2011.








- » H. Moshafi, M. Sadegh Movahed, & A. Sojasi, "Statistical Properties of Deviation of Inflaton from Quantum Thermal Vacuum", accepted paper in National Conference of Gravitation and Cosmology, Winter 2011, Iran.

- » H. Moshafi & M. Sadegh Movahed, "Footprint of Power-law Quintessence model on the Last Scattering Surface fluctuations, Large Scale Structure formation and evolution of the Universe", accepted paper in National Physics Conference, Iran, Summer 2010.

- » H. Moshafi & M. Sadegh Movahed, "The Power Spectrum of CMB Radiation in the Power Law Model of Dark Energy", accepted paper in National Conference of Gravitation and Cosmology, Winter 2010, Iran.

- » H. Moshafi, "Cosmic Microwave Background Radiation, an accurate map of the Cosmos", Quanta Magazine (Scientific Magazine of Physics students at Shahid Beheshti University), Spring 2010.

☰ Skills

 Programming	Python, Fortran, C/C++, \LaTeX
 Web	WordPress, HTML
 Scientific Codes	CosmoMC, CAMB, GADGET-2., CosmoLib, HEALPix, GLESP, CMBEASY, CLASS, Zeno
 Scientific Softwares	Wolfram Mathematica, Maple, MATLAB, GNUplot, Grace, Octave, ...
 Graphics Editor	Adobe Photoshop, Corel Draw, Gimp, ScreenFlow, ...
 Office Softwares	LibreOffice, iWork, Microsoft office, ...
 Languages	English, Persian, Arabic, Azarbijani, Turkish

🗣 Languages

ENGLISH: READING ★ ★ ★ ★ ★ LISTENING ★ ★ ★ ★ ☆ SPEAKING ★ ★ ★ ★ ☆	PERSIAN: READING ★ ★ ★ ★ ★ LISTENING ★ ★ ★ ★ ★ SPEAKING ★ ★ ★ ★ ★
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📁 Operating System

 GNU/LINUX:	★ ★ ★ ★ ★
 MACOS:	★ ★ ★ ★ ★
 WINDOWS:	★ ★ ★ ★ ★

Workshop

LECTURER

- » Introduction to Cosmological Codes (CAMB, CosmoMC), SBU, Tehran, IRAN.

IRAN
Spring 2018

Workshop

LECTURER

- » Introduction to Cosmological Monte Carlo (CosmoMC), SUT, Tehran, IRAN.

IRAN
Winter 2018

School

- » "Tehran meeting on Modified Gravity", IPM, Tehran, IRAN.

IRAN
Winter 2016

School

- » "Summer School on Cosmology", ICTP, Trieste, ITALY.

ITALY
Summer 2016

School

- » School of "Advanced Cosmology", Shahid Beheshti University, Tehran, IRAN.

IRAN
Fall 2013

School

- » School of "N-body Gravitational Dynamical Systems", IHP, Paris, France.

FRANCE
Fall 2013

Workshop

- » Workshop of "Origin of Cosmic Structures: numerical and theoretical approach", IHP, Paris, France.

FRANCE
Fall 2013

School

- » 20th Spring School of Physics, IPM, Tehran, IRAN.

IRAN
Spring 2013

Conference

- » National conference of Gravitation and Cosmology (NGC), Shahid Beheshti University, IRAN.

IRAN
Winter 2013

School

- » Summer School on Cosmology, ICTP, Trieste, ITALY.

ITALY
Summer 2012

Workshop

- » Workshop on Large Scale Structure, ICTP, Trieste, ITALY.

ITALY
Summer 2012

Workshop

- » Workshop on Large Scale Structure, ICTP, Trieste, ITALY.

ITALY
Summer 2012

School

- » 19th Spring School of Physics, IPM, Tehran, IRAN.

IRAN
Spring 2012

Conference

- » National conference of Gravitation and Cosmology (NGC), Tehran University, IRAN.

Workshop

- » 4th Workshop on High Performance and Grid Computing (HPC4), IPM, Tehran, IRAN.

Conference

- » National conference of Gravitation and Cosmology (NGC), Sharif University of Technology, Tehran, IRAN.

Conference

- » National conference of Physics, Bu Ali Sina University, Hamedan, IRAN.

Conference

- » National conference of Gravitation and Cosmology (NGC), Shahid Beheshti University, Tehran, IRAN.

📷 Extracurricular Activity

- » Photography
- » Studying out of Physics
- » Video gaming
- » Sport

📌 References

1. Dr. Seyed Mohammad Sadegh Movahed:

Associate Professor of Physics, Dept. of Physics
Shahid Beheshti University

✉ m.s.movahed@ipm.ir

2. Dr. Shant Baghram:

Assistant Professor of Physics, Dept. of Physics
Sharif University of Technology

✉ baghram@sharif.edu

3. Dr. Razieh Emami:

Institute for Theory and Computation
Harvard-Smithsonian Center for Astrophysics

✉ iasraziehm@ust.hk

4. Dr. Mohammad Hossein Namjoo:

Center for Theoretical Physics
Massachusetts Institute of Technology

✉ namjoo@mit.edu