Curriculum vita

Personal Data:

Name: Hosein
family name: Haghi
Born: February 4th 1978, Tehran -Iran
Family Status: Married
Nationality: Iranian
Address: Department of Physics, Institute for Advanced Studies in Basic Sciences (IASBS),P. O. Box 45195-1159 Zanjan 45195 Iran
Tel. (mobile): 0098 0912 401 4456
Tel. (work): 0098 (241) 415 2124
Fax: 0098 241 415 2104
E-Mail: haghi@iasbs.ac.ir
E-Mail: hossein@astro.uni-bonn.de

Education & Qualifications:

- **2008-2011(September)** Postdoctoral in Physics Department of Institute for Advanced Studies in Basic Sciences (IASBS)
- **2003-2008(September)** PhD student in Physics Department of Sharif University of Technology
  Supervisor: Dr. Sohrab Rahvar
  Title of PhD Thesis: Modified Gravity Models in Galactic Scales.
- **2002-2003** M.Sc from Sharif University of Technology.
  M.Sc Thesis: Evolution of Quantom Magnetic Dots Under Magnetic Field
  Supervisor: Dr. Keivan Esfarjani
- **1998-2001** B.Sc from Sharif University of Technology.
- **1993-1998** High school from Shahid Beheshti center (SAMPAD), Tehran-Iran.

Present Research Fields:

- Dynamical evolution of Dwarf galaxies and Globular clusters (N-body simulation).
- MOdified Gravity/Dynamics models in galactic and sub-galactic scales.
- Dark matter profiles in galaxies.
- Structure formation in alternative gravity models.

List of Publications and Preprints :

Journal Papers:

- **1: Hosein Haghi**, Sohrab Rahvar and Akram Hasani-Zonooz
  The Magellanic Stream in Modified Newtonian Dynamics
  `The Astrophysical Journal`, 2006, Volume 652, Issue 1, pp. 354-361.

- **2:** Mola Malekjani, Sohrab Rahvar and **Hosein Haghi**
Spherical Collapse In MOND
The Astrophysical Journal, Volume 694, 12201227, 2009 April 1.

- **3: Hosein Haghi**, Baumgardt Holger; Kroupa Pavel; Grebel Eva K.; Hilker Michael; Jordi Katrin
Testing fundamental physics with distant star clusters: theoretical models for pressure-supported stellar systems
Mon. Not. R. Astron. Soc, 395, 3, 1549 (2009)

- **4:** K. Jordi, E. K. Grebel, M. Hilker, H. Baumgardt, M. Frank, P. Kroupa, **Hosein Haghi**, P. Cote, and G. Djorgovski
Testing fundamental physics with distant star clusters: analysis of observational data on Palomar 14
The Astronomical Journal, 137, 6, 4586 (2009).

- **5: Hosein Haghi**, Akram Hasani-Zonooz and Sohrab Rahvar
Magellanic Stream: A Tool for Studying the Halo Model of Milky Way
2009, New Astronomy, 14, 8, 692.

- **6: Hosein Haghi** and Sohrab Rahvar
Observational Constraints on the Modified Gravity Model (MOG) Proposed by Moffat: Using the Magellanic System
Int J Theor Phys (2010) 49: 10041017.

- **7:** Yousof Sobouti, Akram Hasani Zonooz and **Hosein Haghi**
Tully-Fisher relation, key to dark matter companion of baryonic matter
2009, Astron. Astrophys. (A&A), 507, 635638.

- **8:** Mola Malekjani and **Hosein Haghi**
The effect of background cosmology on the MONDian spherical collapse
New Astronomy in press.

- **9:** Akram Hasani Zonooz and **Hosein Haghi**
The Distinguishing Factor for Gravity Models: Stellar Population Synthesis
Astron. Astrophys. (A&A), 524, A53-1-8, 2010.

- **10: Hosein Haghi**, Holger Baumgardt and Pavel Kroupa
Distant star clusters of the Milky Way in MOND
Astron. Astrophys. (A&A), 527: (A33), 1-7, 2011.

- **11:** Hasani Zonoozi, A., H. W. Kuepper, A., Baumgardt, H., **Haghi, H.**, Kroupa, P. and Hilker, M.
Direct N-body Simulations of Globular Clusters I. Palomar 14
Mon. Not. R. Astron. Soc., 411, 1989-2001, 2011.

- **12:** M. Frank, M. Hilker , H. Baumgardt, P. Cote, E. Grebel, **H. Haghi**, A. Kuepper, and G. Djorgovski
The velocity dispersion and mass function of the outer halo globular cluster Pal 4
MNRAS in press, 2011.

Notes in proceeding:

- **1:Hosein Haghi**, "*External field effect in quantum magnetic dots*", Annual physics conference , Azar-shahr, Tabriz, IRAN, september (2004), **Published in the conference proceeding**.
- **2:Hosein Haghi**, "*Magellanic Stream In MOND*", Annual Astronomy conference , Zanjan, IRAN, February (2006), **Published in the conference proceeding.**
- **3: Hosein Haghi**, "*Orbital family of Kuzmin disk in MOND*", National cosmology meeting, Tehran, Shahid Beheshti University , January 2007.
- **4: Hosein Haghi**, Tidal Dwarf Galaxies: Ghosts from structure formation Bonn/Bad Honnef (Germany) , May 25-29, 2009
  Title of talk: Testing fundamental physics with distant globular clusters. **Published in the conference proceeding**.
- **5:** MONDian dynamics of Distant stellar system in the Milky Way, 13th Meeting of research astronomy, Zanjan, Iran, February 4-5, 2009
  Published in the conference proceeding.
- **6:Hosein Haghi** and Mohammad Malekjani, Structure formation in MOND, 13th Meeting of research astronomy, Zanjan, Iran, February 4-5, 2009
  Published in the conference proceeding.
- **7:** Hasani Zonoozi, A., Kuepper, A., Baumgardt, **H., Haghi**, H., Kroupa, P. and Hilker, M., "Direct N-body simulations of globular clusters: (I) Palomar 14 ", **The Star Clusters Young Old Newsletter (SYON)**: (49), 26-26, 2010.

Schools and Conferences Attended:

- **1:** International Summer school in Cosmology and Astroparticle Physics and Workshop on Nongussianity in Cosmology 10 - 28 July 2006, Trieste, Italy.
- **2:** MODEST8a School on Dense Stellar Systems and Gravitational Wave Generation. Zentrum fur Astronomie Univ. Heidelberg (ZAH), 12 - 14 March 2008, Heidelberg, Germany.
- **3:** International School and Workshop on Cosmology, January 16-24, 2005, Qeshm Island, IRAN. (I Presented a seminar: *" Magellanic Stream as a tool to identify Galactic halo models "*).
- **4:** IPM Cosmology School and Workshop (ICSW07) June 2 - 9, 2007 Tehran - IRAN. (I Presented a seminar: *" Modified Gravity Models in Galactic scales "*).
- **5:** International Workshop on Gravitational Microlenzing, October 10-13, 2007, IPM School of Astronomy, Tehran, IRAN.
- **6:** National Workshop on String-Cosmology 2-4 Ordibehesht 2004, Yazd-Iran.
- **7:** The first $Sh^2 - T$ meeting on gravitation and cosmology, Thursday 6th Ordibehesht 1386, Physics department, Shahid Beheshti Univ., Evin, Tehran. I Presented a seminar: *" Orbital family in MONDian* Kuzmin disk ".

- **8:** National Workshop on Cosmology, August 2003, IPM, Tehran-Iran.
- **9:** Tidal Dwarf Galaxies: Ghosts from structure formation Bonn/Bad Honnef (Germany) , May 25-29, 2009
  Title of talk: Testing fundamentl physics with distant globular clusters.

Research interest:

- My research interests are centered on **theoretical** and **computational** galactic dynamics and include: Galactic satellite's internal (velocity dispersion and density profile) and external dynamics (tidal interaction with host galaxy), Modified Newtonian dynamics and applications to galactic scales. Globular Clusters dynamical evolution, Magellanic system's dynamical evolution and especially Magellanic Stream as an outcome of internal interactions of local group members and analyzing of galactic rotation curves.

Awards and research fellows:

- **Silver medal** in National Physics Olympiad , 1996.
- **Ranked 14th** out of 10000 participants in M.Sc. qualification exam and selected for final stage of National University Student Physics Olympiad 2000, Hamedan-Iran.
- January-June(2008): **Visiting Research Fellow** for six months at the Argelander Institute For Astronomy (AIFA), Bonn - Germany.
- June (2009): **Visiting Research Fellow** for one month at the Argelander Institute For Astronomy (AIFA), Bonn - Germany.
- January (2010): **Visiting Research Fellow** for one month at the Argelander Institute For Astronomy (AIFA), Bonn - Germany.
- June-September (2010): **Visiting Research Fellow** for three months at the Argelander Institute For Astronomy (AIFA), Bonn - Germany.

Teaching Experience:

- lecturer in course of **Galactic Dynamics** (2008) at IASBS.
  It is presented for the fist time for PhD program at IASBS.
- lecturer in course of **Astrophysics I and II** (2008-2009) at IASBS.
- Assistant of Basic Physics (2004-2006): for B.Sc. students at Sharif University of Technology.
- Assistant of Electromagnetic course (2003): for B.Sc. students at Physics Department, Sharif University of Technology.
- Teaching Physics and Astronomy for students in SAMPAD schools for national olympiad competitions (1998-2007)

Work Experience:

- Chair of scientific committee of **13th Meeting on Research Astronomy**, February 2009, Zanjan-IASBS.
- Chair of scientific committee of **14th Meeting on Research Astronomy**, May , 2010, Zanjan-IASBS.
- Researcher at the Institute for studies in theoretical physics and mathematics, School of Astronomy (IPM), 2007-2008, Tehran-Iran.
- Researcher at the Argelander Institute For Astronomy (AIFA), January-June 2008, Bonn-Germany.
- Researcher at the Argelander Institute For Astronomy (AIFA), June 2009, Bonn-Germany.
- Researcher at the Argelander Institute For Astronomy (AIFA), January 2010, Bonn-Germany.
- Academic Marker of 29th International Physics Olympiad, 2007, Isfahan-Iran.
- Manager of Physics club in Bahman cultural center, 2002-2004, Tehran-Iran.

Selected and relevant courses:

- Course of Cosmic Microwave Background (CMB), inflation and early Universe at ICTP workshop 2006 Italy.
- Astrophysics of Galaxies (lecturer : Prof. Pavel Kroupa), Argelander Institute For Astronomy (AIFA), January-June 2008.
- N-body simulation methods in stellar system (lecturer : Dr. Holger Baumgardt), Argelander Institute For Astronomy (AIFA), January-June 2008.
- Several courses of Cosmology: Dark Energy, Modified Gravity models, Dark matter, Gravitational Lensing and CMB (Dr. Rahvar).
- Gravitational lensing course at IPM and got first mark in final exam, IPM , School of AStronomy, Summer 2007.
- Special and general relativity (Prof. Mansouri).
- Course of Random Data Processing (Prof. Rahimitabar)
- Course of Disordered systems such as: Neuron networks, Gene evolution, Stochastic process etc (Prof Karimipour).
- Fundamental Particle Physics (Prof. Ardalan).
- Quantum field theory (Prof. Arfaei and Prof. Golshani).
- Course of Critical Phenomena (Prof. Roohani).

Programming Experience:

- Familiar with some N-body simulation codes such as N-MODY, N-body4, N-body6 and Supper-box.
- Familiar with Linux and Windows Systems.
- Visual DIGITAL Fortran 90 programming.
- Familiar with softwares like Mathematica,Maple,Curve expert, Table curve,Gnu plot, Tecplot, ...

Hobby:

- Playing football, volleyball and going mountain for fun.
- Studying the social, historical and political books.
- Singing alone.
- Listening to the traditional music.