Saeed Sarpas

✣ Contact Information:

Office:
Raum 3.013 — Argelander-Institut für Astronomie
Auf dem Hügel 71 — D-53121 Bonn
✆ Tel: +49-(0)228 73 9398
✉ Email: saeed@astro.uni-bonn.de

Home:
Babette-koch-weg 1 — Zi. 55442
D-53121 Bonn
✆ Tel: +49-(0)176 808 22642
✉ Email: s.sarpas@gmail.com

✣ Personal Information:

Place of Birth: Karaj, Iran
Date of Birth: 22 May 1989
Nationality: Iranian

✣ Language Skills:

Persian: Native, English: Fluent, German: Basic (A1)

● Academic Qualification

Master of Science (M.Sc.) in Astrophysics — Since Oct 2014
Argelander-Institut für Astronomie, University of Bonn, Germany

Accepted for Master of Science (M.Sc.) in Physics, Complex systems — Oct 2013 — Mar 2014
Shahid Beheshti University, Tehran, Iran
I left this program after one semester to join the M.Sc. in Astrophysics at University of Bonn.

Bachelor of Science (B.Sc.) in Physics — Oct 2008 — Aug 2013
Shahid Beheshti University, Tehran, Iran

Pre-university Degree in Mathematics and Physics — Jun 2007
Shahid Soltani (NODET) high school, Karaj, Iran

Summer School of National Olympiad in Astronomy and Astrophysics — Jun — Aug 2005
Young Scholar Club (YSC), Tehran, Iran
Only 24 out of more than 6000 participants were accepted.

Passed NODET high school entrance exam — Aug 2003
National Organization For Development of Exceptional Talents
Only 16 out of more than 8000 participants were accepted.

● Master Thesis

Discreteness effects in N-body simulations of cosmological structure formation — ECD: Mar 2017
Argelander-Institut für Astronomie, University of Bonn, Germany
Supervisor: Prof. Dr. Cristiano Porciani

Cosmological N-body simulations compute the gravitational interactions between discrete particles instead of solving the Vlasov-Poisson equation. This discreteness might lead to some nonphysical consequences (e.g. generation of spurious structures, noisy force calculation, regular fragmentation).
Our approach to studying these effects is,

1. generate different initial conditions (IC) by varying the number of particles at fixed power spectrum,
2. run N-body simulations using generated ICs,
3. find matching halos between different simulations,
4. study the statistical properties of the halos along the history of the simulations.

● Internship

A C code to the matter power spectrum
Argelander-Institut für Astronomie, University of Bonn, Germany — Nov 2015 — Feb 2016
Supervisor: Prof. Dr. Cristiano Porciani

A modular C code for calculating the matter power spectrum of a given field, extendable to calculate bi-spectrum. For developing this code, I used Test-Driven Development (TDD) which makes the programmer confident of the code accuracy by writing tests before implementation.

● Talks

A C code to the Matter Power Spectrum
Argelander-Institut für Astronomie, University of Bonn, Germany — 29 Feb 2016

Discreteness Effects in Cosmological N-Body Simulations
ETH Zürich, Institute for Astronomy, Switzerland — 30 Jan 2017

Discreteness Effects in Cosmological N-Body Simulations
Argelander-Institut für Astronomie, University of Bonn, Germany — 31 Jan 2017

● Professional Experience

Teaching Assistant (Argelander-Institut für Astronomie, University of Bonn, Germany) — Apr — Sep 2016
Organized tutorial classes and solved problems for graduate-level course Astrophysics of Galaxies

Teaching Assistant (Argelander-Institut für Astronomie, University of Bonn, Germany) — Oct 2015 — Mar 2016
Organized tutorial classes, solved problems and evaluated tests for graduate-level course Cosmology

● Technical Experience

Simulation of gravitational N-body systems fully implemented on graphics processing units with CUDA C
Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran — Apr 2012
Presented in the 16th annual meeting on research in Astronomy

● Bachelor Thesis

Simulating star clusters with NBODY6
Shahid Beheshti University, Tehran, Iran — Apr 2013
Supervisor: Assoc. Prof. Dr. Sadegh Movahed

In this project, in addition to running sample simulations using NBODY6, we studied different numerical methods for solving linear differential equations suitable for direct N-body simulations.

● Technical Skills

Programming Skills
Expert in C, Python, JavaScript, Shell script
Advanced in C++, Java, Ruby, PHP, Clojure and parallel programming using CUDA C, OpenMp and MPI
Familiar with Fortran, Scheme, Lisp, ML

Web Development
Expert in AngularJS, Ruby on Rails, Node.js (familiar with react, om, meteor)
Advanced knowledge in relational database design, SQL, NoSQL

Theoretical Computer Science
Skilled in algorithm, data structure, various programming paradigms, test/behavior-driven development and continues integration

● Work Experience

Web Developer (Ambient Innovation, Cologne, Germany)
Using web development technologies, such as Ruby on Rails and AngularJS 2, as a part-time employee my task is to develop and maintain web applications.
Jan 2017 — present

Web Developer (Appcube GbR, Bonn, Germany)
Using web development technologies, such as AngularJS, Node.js and Java EE, as a part-time employee my task was to develop and maintain a few mobile and desktop applications.
Apr 2015 — Aug 2016

Web Developer (Kelasi non-profit organization, Karaj, Iran)
Developing an information management social network, inspired by version control ideas.
Apr 2013 — Apr 2015

Astrophysics Olympiad Teacher (NODET high schools, Iran)
Teaching different Astrophysics topics to talented high school students to prepare them for the International Olympiad on Astronomy and Astrophysics (IOAA)
2005 — 2014

Astrophysics Olympiad Teacher (Salam Schools Complex, Tehran, Iran)
2010 — 2014

● Honors & Awards

Silver medal of the 1^{st} national olympiad on Astronomy and Astrophysics
Young Scholar Club (YSC), Tehran, Iran
Aug 2005

Awarded the annual grant for the elite university students from INEF
Iran's National Elites Foundation
Oct 2008 — Oct 2009

Member of INEF
Iran's National Elites Foundation
Since 2008

● Workshops & Conferences

8th Bethe Center Workshop: Particle Physics Meets Cosmology (Physikzentrum Bad Honnef, Germany) 10 — 14 Oct 2016

BCGS Weekend Seminars (Physikzentrum Bad Honnef, Germany) 22 — 24 Apr 2016

BCGS Weekend Seminars (Physikzentrum Bad Honnef, Germany) 17 — 19 Apr 2015

High Performance Computing, HPC5 (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran) 12 — 18 Feb 2013

Cloud Computing (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran) 1 — 2 Mar 2012

Thinking in GPU (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran) 11 — 12 Jul 2011

GPU Programming (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran) 27 May 2010