

Sergey Khoperskov

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RESEARCH INTERESTS

Galactic archaeology, Near field cosmology, Galactic structure, dynamics and chemical evolution, Galaxy formation and evolution simulations, Large-scale stellar surveys of Milky Way, ML applications

ACADEMIC POSITIONS

Leibniz-Institute für Astrophysik Potsdam (AIP) <i>Postdoctoral Research Associate</i> Milky Way and the Local Volume group	<i>since Oct 2020</i> Potsdam, Germany
Max Planck Institute für Extraterrestrische Physik (MPE) <i>Postdoctoral Researcher</i> Dynamics Group, OPINAS	<i>Oct 2018 – Sept 2020</i> Garching bei München, Germany
Observatoire de Paris, CNRS <i>ANR Researcher</i> GEPI, Section de Meudon	<i>May 2016 – Sept 2018</i> Meudon, France
Università degli Studi di Milano <i>Postdoctoral Researcher</i> Dipartimento di Fisica	<i>May 2014 – Dec 2015</i> Milan, Italy

VISITING FELLOWSHIPS

Observatoire de Paris <i>Affiliated researcher (2 months/year)</i> PSL University, GEPI	<i>Sep 2021 – Sep 2023</i> Meudon, France
Universität Heidelberg <i>Volkswagen Stiftung funded visitor</i> Astronomisches Rechen-Institut (ARI)	<i>Sep 2016 – Sep 2019</i> Heidelberg, Germany

EDUCATION

PhD in Astrophysics (with honors) Sternberg Astronomical Institute of the Moscow State Univ. title: <i>Evolution of disk galaxies: study of the hierarchy of structures</i> advisor: <i>Prof. Dr. B. Shustov</i>	<i>Sept 2011 – April 2013</i> Moscow, Russia
MS in Computational Physics (with honors) Volgograd State Univ. title: <i>Simulations of the gas dynamics using parallel computing</i> advisor: <i>Dr. M. Eremin</i>	<i>Sept 2009 – June 2011</i> Volgograd, Russia
BS in Physics (with honors) Volgograd State Univ. title: <i>Instabilities in galactic gaseous disks</i> advisor: <i>Dr. M. Eremin</i>	<i>Sept 2005 – June 2009</i> Volgograd, Russia

TEACHING AND MENTORING

- Lecturer assistant “Galactic dynamics” (with M. Steinmetz; MA, Potsdam Uni) 2023
- Lecturer assistant “Introduction in Astronomy” (with M. Steinmetz; BA/MA, Potsdam Uni) 2021, 2023
- PhD thesis co-supervision (Tristan Boin, Paris Observatory), 2 papers together since 2024
- Master thesis co-supervision (Georg Noffz, TU Berlin) since 2024
- Master thesis co-supervision (Jeicot Gomez, Potsdam University), 1 paper together Feb 2023 – Jul 2024
- Bachelor thesis supervision (Santiago Rodrigez, Berlin Freie University) May 2023 - Dec 2023
- Visiting project co-supervision (Ethan Vislosky, AIP), 1 paper together 2022
now: Research Fellow, CfA — Harvard & Smithsonian, USA
- Remote internship (Bhargav Annem, Texas Univ.), Regeneron STS program prize, 1 paper together 2022
now: Undergrad at Caltech, USA
- Bachelor thesis co-supervision (Hannes Kroke, Berlin Freie University) July 2022 - Feb 2023
- Master thesis supervisor (Julien Marabotto, Surrey University), 1 paper together Feb 2022 - Feb 2023
now: researcher in Neuroimaging (Uni. Lausanne, Switzerland) – > Padova Uni., Italy (TBD)
- School student project supervision (Helena Fabel) Sep - Nov 2022
now: Undergrad in LMU, Munich, Germany
- Supervision of a student-job project (Ranjith Mudimadugula, AIP) Sep 2021 - Sep 2022
now: Master Student, AIP, Potsdam, Germany
- Supervisor of 4 internship students (GEPI, Paris Observatory) 2016 - 2018
- Member of examination panel (BA, Astronomy course, Milan University) Sep 2015
- Co-advisor of 2 master students (Physics Department, Milan University) 2014 - 2015

COMPUTING TIME ALLOCATIONS

- PI, 26M CPUh at SuperMUC-NG (Leibniz Supercomputing Centre) March 2024-Dec 2025
co-I: N. Libeskind, M. Shaller, M. Steinmetz
- PI, 1M CPUh at IRENE (TGCC-CCRT), co-I: P. Di Matteo March 2023 - May 2024
- PI, 0.5M CPUh at SuperMUC-NG (Leibniz Supercomputing Centre) May 2023 - Sept 2024
co-I: N. Libeskind, M. Shaller
- co-I, 9M CPUh at IRENE (TGCC-CCRT), PI: P. Di Matteo Apr 2024 - Apr 2025
user: Newton cluster (AIP) since Oct 2020
- PI, 6M CPUh, Lomonosov (MSU) Jan 2019 - Dec 2021
user: Cobra, Draco and Hydra clusters (MPCDF) Oct 2018 - Oct 2020
- co-I, MilkyWay, Kepler (ARI), PI: R. Spurzem, P. Berzik, A. Just Sep 2017 - Sep 2020
- co-I, 7M CPUh at OCCIGEN (CINES) and IRENE (TGCC-CCRT), PI: P. Di Matteo Apr 2017 - Apr 2022

OUTREACH AND PROFESSIONAL SERVICE

- Referee for Nature, Nature Astronomy, Nature Communications, MNRAS(L), A&A(L), ApJ(L), Galaxies, Astronomische Nachrichten, New Astronomy 10+ papers/year
- Co-lead of weekly arxiv journal club (MWLV, AIP) since 2020
- Referee for the ERC Synergy Call 2022
- Multiple “Book a Scientist” conversations (outreach project, Leibniz-Gemeinschaft) 2022, 2023
- Referee of several initiative Research Projects (ANID, Chile) 2022
- Co-organizer of Special Session *Âges stellaires et évolution galactique* (SF2A, Paris) 2021
- Referee for the DiRAC computational projects (national HPC call in the UK) 2020, 2021
- Chair of the Dynamics group seminar at OPINAS (MPE, Garching) Sept 2018 - Sept 2020
- Member of the Editorial Board of *Mathematical Physics & Computer Simulations* journal 2019 - 2020
- Organizer of *Chemical and dynamical modelling of MW-type galaxies* (with F. Fragkoudi, SF2A, Paris) 2017

- LOC member of the international conference *The Milky Way and its environment* (IAP, Paris) 2016
- Member of the International Astronomical Union since 2015
- Volunteer guide at the Observatory of the Institute of Astronomy of the RAS 2012 - 2013

MEDIA AND AWARDS

- Bild der Wissenschaft: Das Leben der Galaxien 2021
- ESA: Five fascinating Gaia revelations about the Milky Way 2020
- Paris Observatory news about the Gaia phase-space spiral 2019
- Astronomy & Astrophysics journal cover image 2018
- Best PhD thesis award (INASAN) 2013
- Personal prize from Intel Corporation 2011
- First prize, Science talk competition (Winter School, URFU) 2009, 2010, 2011

AWARDED RESEARCH FUNDING

total funding as PI \sim 250 k€

- co-PI: PhD funding at Paris Observatory (DIM Origines) PI: P. Di Matteo 2024 - 2026
- PI: Supercomputer simulations of the Milky Way and nearby galaxies (RSF) 2019 - 2021
- Co-I: The assembly history of disk galaxies over the last 8 Gyr (CEFIPRA) 2017 - 2018
PIs: F. Combes, K. Saha
- Co-I: MOD4Gaia (Agence Nationale de la Recherche) PI: P. Di Matteo 2016 - 2018
- Co-I: Dynamical mechanisms of accretion in galactic nuclei (Volkswagen Stiftung) 2016 - 2018
PI: R. Spurzem
- PSL fellowship, Université de Paris (declined) 2016, 2018
- PI: Bending instability in galaxies with counterrotation (RFBR) 2016
- PI: Magnetic field and dynamical processes in disk galaxies (RFBR) 2016 - 2018
- PI: Disk galaxies evolution: star formation and chemical evolution 2015 - 2016
- Co-I: Chemical and Dynamical Evolution of the Milky Way and Local Group Galaxies (MIUR) 2014 - 2015
PI: F. Matteucci
- PI: Dust grains transport in the magnetized ISM at the galactic scales (RFBR) 2014
- PI: Kinematic manifestations of the triaxial dark matter in disk galaxies (RFBR) 2012
- PhD Fellowship (Dynasty Foundation) 2011, 2012, 2013
- Graduate student grant (Intel Corporation) 2010

MAJOR COLLABORATIONS

- 4MOST spectroscopic survey
- Gaia and MOONS teams (P. Di Matteo, M. Haywood, D. Katz), Paris Observatory
- CLUES collaboration (N. Libeskind), Constrained Local UniversE Simulations
- SWIFT (M. Schaller), a hydrodynamics and gravity code for astrophysics and cosmology.
- F. Fragkoudi (Durham), G. van den Venn (Vienna), F. Combes (IAP), O. Gerhard (Garching)

PERSONAL

Born: 25 April 1988

Family: married; no kids; two dogs