Dr. Katarina (Dida) Markovič: *Curriculum Vitae*

CONTACT
INFORMATION

Jet Propulsion Laboratory
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INTERESTS
: COSMOLOGY, DARK ENERGY AND DARK MATTER, SIMULATING SURVEY SYSTEMATICS, REDSHIFT-SPACE DISTORTIONS, SCIENTIFIC COMPUTING, SYNERGY OF ART & SCIENCE

EXPERIMENTS

Nancy Grace Roman Space Telescope — **2023-present**
Project Infrastructure Team: Cosmology with the HLIS deputy PI — 2023-present
Science Investigation Team: Cosmology with the HLS member — 2020-2022

Euclid Consortium - ESA Euclid Space Telescope — **2007-present**
Information and communication management (ECICOM) lead — 2023
Information channels implementation committee (ECICIC) lead — 2021-2022
Information channels committee (ECICC) lead — 2020-2021
Inter-science-taskforce for Modeling (IST:NL) development consultant — 2020-present
Galaxy Clustering Working Group Likelihood Work Package co-lead — 2018-2020
Galaxy Clustering Working Group Link to Simulations Work Package co-lead — 2016-2017
Inter-science-taskforce for Forecasting (IST:F) editorial team member — 2015-2019
Inter-science-taskforce for Forecasting (IST:F) Galaxy Clustering subgroup co-lead — 2015-2019
Galaxy Clustering End-to-end (GC-E2E) Simulations Project co-lead — 2014-2018

Dark Energy Survey — **2013-14**
Weak Lensing Shear Data tester

EMPLOYMENT

Research Scientist — **2019-present**
at NASA's Jet Propulsion Laboratory, Caltech, Pasadena, CA, USA.
A permanent position working on Euclid and Roman, and other dark sector projects.

Research Fellow — **2016-2019**
at the Institute of Cosmology & Gravitation, University of Portsmouth, UK.
A senior postdoctoral position allowing independence to pursue my own research interests.

UK Space Agency Senior Research Associate with Prof. Will Percival — **2014-2016**
at the Institute of Cosmology & Gravitation, University of Portsmouth, UK.
Developing the survey strategy and data analysis pipeline for Euclid.

Visiting Researcher with Prof. Sarah Bridle — **2013-2014**
remotely at the School of Physics and Astronomy, University of Manchester, UK.
Testing Dark Energy Survey weak lensing data.

Transregio33 Postdoctoral Fellow with Prof. Jochen Weller — **2012-2013**
at the University Observatory Munich, Ludwig-Maximillian University, DE.
Developing models of large-scale structure in a warm dark matter (WDM) cosmology.

EDUCATION

Ludwig-Maximillian University, Munich, DE — **2009-2013**
Ph.D. in Astrophysics at the International Max Planck Research School on Astrophysics

Darwin College, University of Cambridge, Cambridge, UK — **2008-2009**
Certificate of Advanced Study in Applied Mathematics (Part III of the Tripos),

University College London, University of London, UK — **2004-2008**
Master in Science in Astrophysics (MSci Astrophysics),

HONOURS AND AWARDS

Roman Project Infrastructure Team proposal selected (deputy PI, ~$19M) — **2023-2028**
Annual Euclid STAR Leadership & Coordination award — **2023**

	JPL Research and Technology Development Strategic grant (PI, ∼$900k)	**2022-25**
	JPL Voyager Award for outreach	**2022**
	NASA ROSES Astrophysics Theory Program proposal selected (admin PI, $750k)	**2022-2025**
	Euclid Consortium Builder status for key, long-term contributions to the Euclid mission	**2020**
	Annual Euclid STAR team award	**2019**
	Annual Euclid STAR postdoc award recognising exceptional contributions to the mission	**2017**
	Public Engagement Large Awards Scheme for Entropy (PI, £25k, STFC)	**2015-2017**
	R & D Grant for Entropy (€8k, Arcadi Île de France)	**2016**
	Brian Duff Memorial Prize in Physics: best fourth year project in the department	**2008**
	Summer Studentship (£2010, Royal Society)	**2007**
	Zois Scholarship for Gifted Students (approx. €25k, Slovenia)	**2000-2010**

TEACHING & MENTORING		
	Intern mentor to Mr. Shawn Ray, Jet Propulsion Laboratory, Pasadena, USA	**summer 2023**
	Postdoc advisor to Dr. Sujeong Lee, Jet Propulsion Laboratory, Pasadena, USA	**2022-present**
	Cosmology masters course tutor, Ludwig Maximillian University, Munich, DE	**2011-2013**
	Co-supervisor of a master student, Ludwig Maximillian University, Munich, DE	**2011-2012**
	Part-time astronomy demonstrator, University of London Observatory, UK	**2006-2008**
	Peer Assisted Learning leader (volunteer), University College London, UK	**2006-2007**
	GCSE-level maths tutor (volunteer), St. Pancras Library, London, UK	**2006**

PEER REVIEW AND EDITORIAL Reviewer for JPL Internal Grants, NASA ROSES, Universe Journal, Veni Grant, PRD, PRL, & MNRAS. Guest editor for special issue of the Universe Journal on the Cosmological Constant (2022).

COMMITTEES & PANELS		
	Euclid NASA Science Center at IPAC (ENSCI) Operations Readiness Review panel member	**2023**
	JPL Science Visitor and Colloquium Program committee member	**2022-present**
	User Panel for the Euclid NASA Science Center at IPAC (ENSCI) member	**2022-present**
	Nancy Grace Roman Space Telescope Calibration Engineering Peer Review panelist/reviewer	**2021**
	Euclid Consortium Publication Group - Science selected member	**2019-2021**
	Euclid STAR prize committee member	**2018**
	Postdoc representative at the Equality and Diversity committee, ICG, UK	**2016-2017**
	Postdoc representative at the management committee, ICG, UK	**2016-2018**
	Equality and diversity committee (and Athena SWAN team), ICG, UK member	**2015-2016**

ORGANISATION OF SCIENTIFIC EVENTS		
	Scientific Organising Committee: *Euclid Consortium Annual Meeting*, Rome, Italy	**2024**
	Scientific Organising Committee: *Euclid Consortium Annual Meeting*, Oslo, Norway	**2022**
	Organiser: *Euclid US monthly telecon* - virtual,	**2020-2022**
	Cosmology Session Organiser: *CSST-Euclid-Roman Workshop* - virtual,	**2021**
	Organiser: *Roman Pilot Surveys Workshop* - virtual,	**2020**
	Science Organising Committee: *Euclid Advanced School* - virtual,	**2020**
	Galaxy Clustering Session Organiser: *GOLD The Golden Cosmological Surveys Decade*, cancelled due to COVID-19 pandemic, Paris Orsay, France	**2020**
	Scientific Organising Committee: *42nd COSPAR Assembly: Large Space-based Optical and Infrared Surveys session*, Pasadena, CA, USA	**2018**
	Scientific Organising Committee: *Paving the way for next generation of cosmological surveys: new results and new methods in galaxy clustering*, Sexten, Italy	**2018**
	Local Organising Committee: *Euclid UK Meeting*, Portsmouth, United Kingdom	**2017**

SELECTED TALKS		
	Invited Virtual Plenary Talk: *Optimising EC internal communication*, Euclid Consortium Meeting, online	**May 2021**
	Virtual Presentation: *Science Planning Highlights: Cosmology*, Rhodes Euclid Team Review at NASA, online	**Oct 2020**

Invited Virtual Lecture: *Observing Dark Energy*,
ITB Summer School on Galaxies and Cosmology, Indonesia **Sep 2020**

Talk: *Cosmology with the anisotropic galaxy power spectrum with Euclid*,
Seminar at the University of Louvain, BE **Feb 2020**

Requested talks: *Galaxy Clustering End-to-end Group & GC Likelihood Work Package*,
Euclid Consortium Meeting, Bonn, DE **June 2018**

Invited Talk: *Preparing for galaxy clustering analysis with Euclid*,
Kavli Workshop, Cambridge, UK **May 2018**

Talk: *Euclid: the spectro-systematics challenge*,
Simulated Skies Workshop, Madrid, ES **Apr 2018**

Invited talk: *Galaxy clustering analysis with Euclid*,
Cosmology with Large Galaxy Surveys School, NAOC, Beijing, China **Aug 2017**

Requested talk: *Pypelid - Euclidiser of catalogues*,
Euclid ground segment top-level data group (OU-LE3) meeting,
RAS, London, UK **Feb 2017**

Requested talk: *Euclid IST: a road to reliable forecasts*,
Euclid UK Meeting, RAS, London, UK **Dec 2016**

Requested talk: *Simulated Ubercal with Euclid-like 4-dither patterns*,
Euclid Photometric Calibration Workshop, ESAC, Madrid, Spain **Sep 2016**

Talk: *Euclid galaxy clustering end-to-end*,
National Astronomy Meeting, Nottingham, UK **June 2016**

Talk: *Warm dark matter from the large scale structure*,
Astroparticle Physics 2014, Amsterdam, NL **June 2014**

Talk: *Warm dark matter*,
University of Munich Observatory Colloquium, Munich, DE **May 2013**

Selected Science Communication

Invited Talk / Interview: *(Virtual, ∼60k views) NASA Twitter Spaces: #AskNASA about Dark Matter & Dark Energy*,
Hosted by NASA Headquarters, USA **Jul 2023**

Invited Keynote: *The Death Valley Dark Sky Festival: The Cosmic Autobiography*,
Furnace Creek, Death Valley, CA USA **Feb 2022**

Invited Talk: *(Virtual, ∼22k views) Von Karman Lecture Series: The Warm Glow of Our Cool Universe*,
Jet Propulsion Laboratory, Pasadena, USA **Oct 2021**

Invited Video Speaker: *Sky Stories: Cosmologists Occupy an Art Space*,
ArtCenter College of Design, Pasadena, USA **Dec 2020**

Adviser: *Echoes of the Universe's Creation*,
Press release video for NASA Goddard Roman Space Telescope, UK **Nov 2020**

Talk: *Euclid and the Dark Universe*,
Lecture at the Farnham Astronomical Society, UK **April 2018**

Social Media: *Led the first Euclid UK Twitter campaign*,
Euclid Consortium Meeting, Bonn, DE **June 2018**

Talk: *Euclid: A Space Mission to Map the Dark Universe*,
Space Lectures at the Winchester Science Centre, UK **May 2017**

Five performances: *Entropy* - an immersive story about the life of our universe, **2016-present**
TodaysArt Festival (NL), Euclid Meeting (UK), Sonar Festival (E)

Co-lead: *Entropy* project for communicating science to the public through art,
International art-science project: UK, BE, NL, FR, DE + CAN **2011-present**

Talk: *Euclid: A Space Mission to Map the Dark Universe*,
Stargazing Live, University of Portsmouth, UK **Jan 2017**

Talk: *Entropy: Astronomy Staged as a Live Immersive Performance*,
National Astronomy Meeting, Nottingham, UK **June 2016**

Invited Talk: *Entropy: Astronomy Staged as a Live Immersive Performance*,
Resonate Festival, Belgrade, SR **Apr 2016**

Talk: *Sprehodi skozi vesolje: Življenje našega vesolja*,
Slovenian Museum of Natural History, Ljubljana, SI **May 2014**

PUBLICATIONS WITH A SIGNIFICANT CONTRIBUTION

Robertson, Huff & **Markovic**. *Why weak lensing cluster shapes are insensitive to self-interacting dark matter* (submitted for publication in MNRAS) *arXiv:2210.13474*.

Taylor & **Markovič**. *Covariance of photometric and spectroscopic two-point statistics: Implications for cosmological parameter inference* Physical Review D, Volume 106, Issue 6, article id.063536 *arXiv:2205.14167*.

Carrilho et al.. *Interacting dark energy from redshift-space galaxy clustering* 2021JCAP...10..004C *arXiv:2106.13163*.

Taylor, **Markovič**, Pourtsidou, and Huff. *Redshift space distortions: Unmixing radial scales in projection* Physical Review D, Volume 105, Issue 8, article id.084007 *arXiv:2106.05293*.

Yahia-Cherif et al.. *Validating the Fisher approach for stage IV spectroscopic surveys* 2021A&A...649A..52Y *arXiv:2007.01812*.

Shirasaki, Huff, **Markovič**, and Rhodes. *A Semianalytic Model of the Pairwise Velocity Distribution between Dark Matter Halos* 2021ApJ...907...38S *arXiv:2008.02960*.

Tutusaus et al.. *Euclid: The importance of galaxy clustering and weak lensing cross-correlations within the photometric Euclid survey* 2020A&A...643A..70T *arXiv:2005.00055*.

Euclid Collaboration. *Euclid preparation VII: Forecast validation for Euclid cosmological probes* 2020A&A...642A.191E *arXiv:1910.09273*.

d'Amico et al. *The cosmological analysis of the SDSS/BOSS data from the Effective Field Theory of Large-Scale Structure* 2020JCAP...05..005D *arXiv:1909.05271*.

Bose, Pourtsidou, **Markovič**, and Beutler. *Assessing non-linear models for galaxy clustering - II. Model validation and forecasts for Stage IV surveys* 2020MNRAS.493.5301B *arXiv:1905.05122*.

Thomas, Kopp, and **Markovič**. *Using large-scale structure data and a halo model to constrain generalized dark matter* 2019MNRAS.490..813T *arXiv:1905.02739*.

Markovič, Bose, and Pourtsidou. *Assessing non-linear models for galaxy clustering I: unbiased growth forecasts from multipole expansion* 2019OJAp....2E..13M *arXiv:1904.11448*.

Markovič, et al. *Large-scale retrospective relative spectrophotometric self-calibration in space.* MNRAS, 467.3677M, May 2017, *arXiv:1606.07061*.

Markovič & Viel. *Lyα Forest and Cosmic Weak Lensing in a Warm Dark Matter Universe.* Review in PASA, 2014, vol. 31, e006, *arXiv:1311.5223*.

Viel, **Markovič**, Baldi & Weller. *The Non-Linear Matter Power Spectrum in Warm Dark Matter Cosmologies.* MNRAS, 421...50V, March 2012, *arXiv:1107.4094*.

Smith & **Markovič**. *Testing the Warm Dark Matter Paradigm with Large-Scale Structures.* Phys. Rev. D, 84(6):063507, September 2011, *arXiv:1103.2134*.

Markovič, Bridle, Slosar & Weller. *Constraining Warm Dark Matter with Cosmic Shear Power Spectra.* JCAP, 2011, *arXiv:1009.0218*.

See list of all my publications on ADS for more.