# RNDr. Václav Pavlík, Ph.D.

Researcher | Scientific Editor | Lecturer | Science Communicator Junior member of IAU (Division C, G, J, and Executive Committee WG Junior Members) pavlik@asu.cas.cz | http://www.asu.cas.cz/~pavlik

# WORK AND RESEARCH EXPERIENCE

01/2024 – present supported through Investigating the ev	<b>Postdoctoral Researcher</b> <b>Marie Skłodowska-Curie Actions CO</b> rolution of star clusters and their stella	Astronomical Instit FUND, project "MERIT r remnant populations of	<i>tute, Czech Academy of Sciences, CZE</i> " (see Grants below) on cosmological time scales.
07/2023 – 12/2023 Editorial and refere geology, zoology, etc	<b>Associate Scientific Editor</b> e work for a publishing house specialis c.), encyclopedias, and children's litera	<i>Publishing</i> ing in natural science p ture.	<i>house Aventinum s.r.o., Prague, CZE</i> ublications (e.g., astronomy, botany,
08/2022 – 05/2023 Primary instructor Spring 2023 Phy Fall 2022 Physic	Visiting Lecturer for two courses per semester with the s sics 3: Modern Physics (PHYS-P 301)   s 3: Modern Physics (PHYS-P 301)   Ba	Physics Department, I supervision of one Assis Basic Physics of Soun asic Physics of Sound (	ndiana University Bloomington, USA tant/Grader per course. d (PHYS-P 105) PHYS-P 105)
09/2020 – 05/2023 mentor: Prof Enrico Investigating the im	Postdoctoral Researcher A   O Vesperini A   upact of the initial kinematics of stars of	<i>stronomy Department, I</i> on the global dynamical	ndiana University Bloomington, USA evolution of star clusters.
11/2019 – 08/2020 mentors: Prof Vladi Part-time employm numerical models.	<b>Researcher (part-time)</b> imír Karas, Dr Peter Nemeth ent for a transition period after PhD.	Astronomical Instit Studying the early evo	<i>tute, Czech Academy of Sciences, CZE</i> lution of star-forming regions with
EDUCATION		(all levels	at Charles University, Prague, CZE)
2014 – 2019 Thesis: Perturbed ste	<b>Ph.D. in Theoretical Physics, Astron</b> ellar motions in dense star clusters   advis	<b>omy and Astrophysics</b> sor: Dr Ladislav Šubr	awarded Sep 6, 2019
2017 - 2018	Examen rigorosum in Natural Science	ces	(RNDr. – Rerum naturalium doctor)
2012 – 2014 Thesis: <i>Modelling th</i>	<b>Graduate studies in Astronomy and</b> <i>the Orion Nebula Cluster</i>   supervisor: Dr	<b>Astrophysics</b> Ladislav Šubr	(Mgr. – Master's degree)
2009 – 2012 Thesis: Formation at	<b>Undergraduate studies in Physics</b> <i>nd evolution of dynamical binaries</i>   supe	rvisor: Dr Ladislav Šub	( <i>Bc. – Bachelor's degree</i> ) r
TEACHING ACT	IVITIES		
MSc theses supervise	ION		
2024 – present student: Alessandro Thesis: <i>Demography</i>	<b>Co-advisor</b> D Lattanzi   advisor: Prof Steven N. Sho <i>o of the habitable zone</i>	Departme re	ent of Physics, University in Pisa, ITA
2023 – present student: Matyáš Ful Thesis: <i>Long-term st</i>	<b>Co-advisor</b> ksa   advisor: Prof Vladimír Karas   ano tability of captured planetary systems	Astronomical Institution Astronomical Institution (Institution) Astronomical Institution (Institution) Astronomical Institution) Astronomical Institution (Institution) Astronomical Institution) Astronomical Institution (Institution) Astronomical Instit	tute, Charles University, Prague, CZE even N. Shore
2021 – 2022 student: Paolo Suin Thesis: <i>Environmen</i>	<b>Co-advisor</b> (defended with honours on Feb 8, 202 <i>tal influences on the dynamical evolution</i>	Departme 2)   advisor: Prof Steven of star clusters in turbul	ent of Physics, University in Pisa, ITA N. Shore ent molecular clouds
<b>Student projects</b> 11/2023 24-hour coding mat	<b>Mentor</b> for "Astro-Pi Hackathon" rathon for students involved in the ESA	and Raspberry Pi Four	astro-pi.org ndation Education project Astro-Pi.
03/2022	Future career advisor	(for a student of	at Zionsville Middle School, IN, USA)
2019 – 2020 (Vasile Alecsandri N	<b>Mentoring on star cluster models an</b> <i>ational College, Galati, ROU   now at Ha</i>	<b>alysis</b> rvard University)	student: Daria-Teodora Harabor
Czech Astronomy O	lympiad (AO)		
2012 – present	Board member and co-organizer		olympiada.astro.cz
2016 – present <i>section Grants)</i>	LOC member and lecturer of yearly s	student workshops   <b>SO</b>	<b>C chair (2018–2022)</b> (see also

# International Astronomy Olympiad (IAO)

2016 – 2019 **Czech team leader** at XXI – XXIV IAO Czech student's awards: 3 Diploma-II, 9 Diploma-III and 1 Diploma for the best observational round

## Planetarium Prague

01/2018 – 08/2020 Educator & specialist (full-time staff position)

planetum.cz

## Tutoring

09/2018 – 06/2019 Lecturer for "MUDRstart" Intensive physics course for students applying to the Faculty of Medicine of Charles University.

# **GRANTS, FUNDING & PROJECT SUPPORT**

#### Scientific

01/2024 – 06/2026 <b>PI</b> of project "ECLIPSE – Exploring Compact stellar remnants and their Impact on Star Clusters Evolution" ~170 400 EUR
30-month funding from the European Union's Horizon Europe and the Central Bohemian Region under the Marie Skłodowska-Curie Actions – COFUND, Grant agreement ID 101081195 ("MERIT", meritcb.eu)
01/2016 - 12/2018PI of "Perturbed stellar motions in dense star clusters"~20700 EURproject GAUK-186216 (Grant Agency of Charles University)~20700 EUR
05/2013 - 11/2013"Searching for a 'runaway-mass' black hole in the Orion Nebula Cluster"~3600 EURTrainee of ESAC project (PIs: M. Guianazzi, J. Svoboda, H. Bouy)(declined due to personal reasons)
СомритатионаL TIME While this type of support is not conventional, it is specific to my research since numerical models require a lot of computational resources, often in parallel architectures. Access to "free" computational time usually requires similar processes as seeking funding, i.e., submitting applications, yearly summaries, and reporting publications.
03/2022 - presentPI of "Dynamical evolution of star clusters with anisotropic velocity distributions"Indiana University Information Technology Services(CPUs and GPUs, with extended 15 TiB quota)
12/2014 - presentAccess to the Czech national grid MetaCentrum (MetaVO, Cesnet, e-INFRA)subject to yearly evaluation(CPUs, 30 TiB quota   used 5 000+ CPU-days   14 outcomes/publications)
05/2010 - 05/2014Access to the "KK" computer cluster of the Department of PhysicsDepartment of Physics, Charles University, Prague, CZE(CPUs, 1 TiB quota   used for Bc. thesis)
Education
2022PI of "Workshop for younger students of the Astronomy Olympiad"~3 900 EUR"Giftedness strategy 2022" project 0025/7/NAD/2022 (Czech Ministry of Education, Youth and Sports)~3 900 EUR
2021PI of "Workshop for younger students of the Astronomy Olympiad"~3 900 EUR"Giftedness strategy 2021" project 0051/7/NAD/2021 (Czech Ministry of Education, Youth and Sports)~3 900 EUR
2020 <b>PI</b> of "Workshop for younger students of the Astronomy Olympiad" ~3 900 EUR "Giftedness strategy 2020" project 0018/7/NAD/2020 (Czech Ministry of Education, Youth and Sports)
2019PI of "Workshop for younger students of the Astronomy Olympiad"~3 900 EUR"Giftedness strategy 2019" project 0003/7/NAD/2019 (Czech Ministry of Education, Youth and Sports)~3 900 EUR
2018PI of "Workshop for younger students of the Astronomy Olympiad"~3 900 EUR"Giftedness strategy 2018" project 0043/7/NAD/2018 (Czech Ministry of Education, Youth and Sports)~3 900 EUR

# AWARDS AND HONOURS

2021 IU Bicentennial Public Science and Math Award Lecture

from the College of Arts and Sciences, Indiana University Bloomington, IN, USA

2019, 2018, 2017, 2016 Commemorative Diplomas for representing the Czech Republic in international competitions as a Czech Team Leader

from the Czech Minister of education, youth and sports

2014 Master's thesis awarded 3rd place in Czechoslovak Student Scientific Conference in Physics co-organised by the Faculty of Mathematics and Physics of Charles University, Prague, CZE

# **REFEREE WORK**

I serve as a referee for Astronomy & Astrophysics, Monthly Notices of the Royal Astronomical Society, and Astrophysical Journal. I have also been a content reviewer of several publications by Aventinum, Albatros Media, and Slovart publishing houses in the Czech Republic.

# **CONFERENCE ORGANISATION**

#### Scientific

12/2018 LOC of " $(M + 3)^{rd}$  Aarseth *N*-body Meeting" Astronomical Institute, Charles University, Prague, CZE

#### Education & Public outreach

09/2019<br/>Planetarium Prague, CZELOC and lecturer at "Space Educational Festival"(conference & workshop for teachers)11/2019, 11/2018, 11/2017<br/>Planetarium Prague, CZE; Czech Academy of Sciences, Prague, CZEEducational Festival"

# EXTENDED VISITS FOR WORK

01/2020	University of Edinburgh, UK	(invited by Dr Anna Lisa Varri)
02/2024, 08/2019, 11	/2018, 11/2017 University in Pisa, ITA	(invited by Prof Steven N. Shore)
11/2017	University of Rome, ITA	(invited by Prof Roberto Capuzzo Dolcetta)
04/2016 - 05/2016	University of Edinburgh, UK	(invited as a visiting student by Prof Douglas C. Heggie)

## LANGUAGES

Czech (native) | English (fluent) | French (advanced; DALF C1, Ministère Français de L'Education Nationale, 2009)

#### **COMPUTER SKILLS**

Programming	Python   $\[MT_EX\]$   shell scripting (e.g., Bash, AWK)   HTML5/CSS/PHP   C/C++   Fortran	
Software	Adobe Photoshop & InDesign   Office Suite   video editing   Blender 3D modelling	
Operating systems	Linux   Windows   Mac	
Miscellaneous	parallel computing (CPUs and GPUs)   digital planetarium operator (SkySkan DS2)	

## **PUBLICATIONS**

ORCID: 0000-0002-3031-062X. The full list of publications is also in my ADS library

#### Research

- 2024 **Pavlík**, Heggie, Varri & Vesperini Dynamics of star clusters with tangentially anisotropic velocity distribution accepted to A&A, vol., id. arXiv:2405.19400,
- 2023 Livernois, Vesperini & **Pavlík** *Evolution of binary stars in the early evolutionary phases of ultra-faint dwarf galaxies* MNRAS, vol. 521, no. 2, pp. 4395–4405 arXiv:2303.12841, DOI:10.1093/mnras/stad826
- 2022 Suin, Shore & **Pavlík** Environmental influences on the dynamical evolution of star clusters in turbulent molecular clouds A&A, vol. 667, id. A69 Shore and Pavlík were supervisors of Suin's MSc thesis. arXiv:2207.01634, DOI:10.1051/0004-6361/202243579
- 2022b **Pavlík** & Vesperini Mass segregation and dynamics of primordial binaries in star clusters with a radially anisotropic velocity distribution MNRAS, vol. 515, no. 2, pp. 1830–1838 arXiv:2206.11905, DOI:10.1093/mnras/stac1776
- 2022a **Pavlík** & Vesperini Evolution towards energy equipartition in star clusters: effects of the tidal field, primordial binaries, and internal velocity anisotropy MNRAS, vol. 509, no. 3, pp. 3815–3825 arXiv:2110.14646, DOI:10.1093/mnras/stab3157
- 2021 Shore & **Pavlík** *How a fake Kepler portrait became iconic* Physics Today, vol. 74, no. 9, pp. 10–11 Both authors are equal contributors. arXiv:2108.02213, DOI:10.1063/PT.3.4825
- 2021 **Pavlík** & Shore *Close encounters with the Death Star: Interactions between collapsed bodies and the Solar System* A&A Letters, vol. 648, id. L2 arXiv:2103.12745, DOI:10.1051/0004-6361/202140454
- 2021 **Pavlík** & Vesperini *New insights into star cluster evolution towards energy equipartition* MNRAS Letters, vol. 504, no. 1, pp. L12–L16 arXiv:2103.06272, DOI:10.1093/mnrasl/slab026
- 2020b Pavlik Primordial mass segregation of star clusters with primordial binaries A&A, vol. 638, id. A155 ar-Xiv:2004.14389, DOI:10.1051/0004-6361/202037490
- 2020a **Pavlík** *Primordial mass segregation of star clusters: The role of binary stars* Contributions of the Astronomical Observatory Skalnaté Pleso, vol. 50, no. 2, pp. 456–460 arXiv:2001.01450, DOI:10.31577/caosp. 2020.50.2.456
- 2019 Pavlík Perturbed stellar motion in dense star clusters PhD thesis ADS:2019PhDT......111P
- 2019 Pavlík, Kroupa & Šubr Do star clusters form in a completely mass-segregated way? A&A, vol. 626, id. A79 arXiv:1905.09289, DOI: 10.1051/0004-6361/201834265

with VizieR Online Data Catalog: ONC stars masses from literature (Pavlík+, 2019) J/A+A/626/A79

2018 **Pavlík** & Šubr The hunt for self similar core collapse A&A, vol. 620, id. A70 arXiv:1808.05230, DOI:10.1051/0004-6361/201833854

- 2018 Fragione, **Pavlík** & Banerjee Neutron stars and millisecond pulsars in star clusters: implications for the diffuse  $\gamma$ -radiation from the Galactic Centre MNRAS, vol. 480, no. 4, pp. 4955–4962 All authors are equal contributors. arXiv:1804.04856, DOI:10.1093/mnras/sty2234
- 2018 **Pavlík**, Jeřábková, Kroupa & Baumgardt *The black hole retention fraction in star clusters* A&A, vol. 617, id. A69 arXiv:1806.05192, DOI:10.1051/0004-6361/201832919

#### INVITED REVIEWS

2018 Varri, Cai, Concha-Ramírez, Dinnbier, Lützgendorf, **Pavlík**, Rastello, Sollima, Wang & Zocchi *A MODEST review* Computational Astrophysics and Cosmology, vol. 5, no. 1, id. 2 All authors are equal contributors and are listed in alphabetical order, the first author coordinated the manuscript writing. arXiv:1810.07532, DOI:10.1186/s40668-018-0024-6

#### Education

- 2024 **Pavlík**, Vošmera, Gráf & Křížová *Fostering innovation, inclusion, and diversity in astronomy education: The Czech Astronomy Olympiad experience* in proceedings of "III Workshop on Astronomy Beyond the Common Senses for Accessibility and Inclusion", to appear in "Revista Mexicana de Astronomía y Astrofísica Serie Conferencias (edición RevMexAA Conference Series)" arXiv:2401.12376, DOI:10.48550/arXiv.2401.12376
- in prep Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kománek *Problem Booklet 2022/23* DOI:10.5281/zenodo.10214525 (reserved, not active yet)
- in prep Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kománek *Problem Booklet 2021/22* DOI:10.5281/zenodo.8381055 (reserved, not active yet)
- 2021 Czech Astronomy Olympiad, ed. by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2019/20 and 2020/21* ISBN 978-80-907341-2-8, DOI:10.5281/zenodo.8368818
- 2019 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2018/19* ISBN 978-80-907341-1-1, DOI:10.5281/zenodo.8353720
- 2018 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2017/18* ISBN 978-80-907341-0-4, DOI:10.5281/zenodo.8353714
- 2017 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2016/17* ISBN 978-80-270-2697-5, DOI:10.5281/zenodo.8353652
- 2017 Kožuško & **Pavlík** Information and communication technologies in Astronomy Olympiad in proceedings of "Modern trends in physics teaching" (in Czech), vol. 8, pp. 105–107 ISBN 978-80-261-0797-2
- 2016 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2015/16* DOI:10.5281/zenodo.8353642

2014 **Pavlík** *LATEX style for typesetting exercises for Czech Astronomy Olympiad* https://github.com/pavlikva/astroolymp

#### Outreach

I have been involved in these activities: **reviewer and translator** for the publishing houses *Albatros Media, Slovart* and *Aventinum* | **editor and author** for *Astropis* magazine (ISSN 1211-0485) since 2012 | **author** for *Czechoslovak journal of physics* (ISSN 0009-0700) | **key speaker** for *Parabolic Vision Media* (in 2021) | **educator and specialist** at *Planetarium Prague* (2018 – 2020).

This following list includes a selection of my works (the original titles or their translations to English are given).

- 2023 **Pavlík** Interview with Thomas Hertog: "On the origin of time" Czechoslovak journal of physics, vol. 73, pp. 251–256
- 2022 present Libý & **Pavlík** *Observations of the sky* Astropis 129–136, pp. 22–25
- 2022 **Pavlík** Unique photo of the Solar eclipse Astropis 134, pp. 22–23
- 2022 **Pavlík** Interview with Nobel Prize laureate James Peebles Astropis 132, pp. 15–19
- 2022 **book translation** (EN→CZ) The World according to Physics Slovart, author: Al-Khalili, ISBN: 978-80-2760-302-2

2022 **key speaker** *Hubble space telescope documentary* Parabolic Vision Media, educational film

2012 – 2021 Pavlík & Ondřich Observations of the sky

Astropis, 4 volumes per year, pp. 22–25

- 2021 **Pavlík** & Shore *Is Betelgeuse the Death Star?* Astropis 128, pp. 17–19
- 2021 Shore (translation EN→cz: **Pavlík**) *Microquasars* Astropis 128, pp. 31–33
- 2021 Shore & **Pavlík** Supplement: How a fake Kepler portrait became iconic Astropis 128, p. 33
- 2021 Shore & **Pavlík** *How a fake Kepler portrait became iconic* Astropis 127, pp. 39–40
- 2021 **Pavlík** *Star clusters and stellar kicks* Astropis 125, pp. 26–28
- 2021 **Pavlík** & Żďárská Stellar dynamics Interview with Václav Pavlík beyond astronomy Czechoslovak journal of physics, vol. 71, pp. 402–409
- 2020 Pavlík Mountaineering and star clusters (interview

with Sverre Aarseth) Astropis 123, pp. 29–34

- 2020 **Pavlík** *Can a star cluster collapse?* Astropis 122, pp. 29–31
- 2020 **Pavlík** Interview with Nobel Prize laureates William Phillips and Wolfgang Ketterle Astropis 1/2020, pp. 12–14
- 2020 **book translation** (EN→CZ) *Stephen Hawking: A Memoir of Friendship and Physics* Slovart, author: Mlodinov, ISBN 978-80-2760-095-3
- 2020 translation cooperation  $(EN \rightarrow CZ)$  The Adventures of Rosetta & Philae Planetarium Prague, movie
- 2019 **Pavlík** *How do star clusters form?* Astropis 4/2019, pp. 30–32
- 2019 book cover illustration *Prisoners of Mars* Aventinum, author: Pokorný, ISBN 978-80-7151-278-3
- 2019 **Pavlík** Interview with Nobel Prize laureate Rainer Weiss Astropis 3/2019, pp. 15–19
- 2019 review and update *Pocket planisphere* Aventinum, author: Rükl, ISBN 978-80-7151-277-6
- 2019 **full-dome show translation**  $(cz \rightarrow EN)$  and remake collaboration *Night Sky in 8K* Planetarium Prague
- 2019 **Pavlík** Interview with Nobel Prize laureate Kip Thorne Astropis 2/2019, pp. 11–14

- 2019 translation cooperation  $(EN \rightarrow CZ)$  Horizon Planetarium Prague, full-dome show
- 2018 book editor Astronomy: 100+1 intriguing questions Aventinum, authors: Mikulášek, Pokorný & Gabzdyl, ISBN 978-80-7442-061-0
- 2018 **book translation** (EN→CZ) Celestial Atlas: A Journey in the Sky through Maps Slovart, author: Percivaldi, ISBN 978-80-7529-642-9
- 2018 **full-dome show translation** ( $EN \rightarrow CZ$ ) *Two Little Pieces of Glass* Planetarium Prague
- 2018 translation cooperation  $(EN \rightarrow CZ)$  Our Violent Planet Planetarium Prague, full-dome show
- 2018 remake collaboration *Movements of the Earth* Planetarium Prague, Czech full-dome show
- 2018 remake collaboration *Maps of Foreign Worlds* Planetarium Prague, Czech full-dome show
- 2015 book editor *Constellations* Aventinum, author: Rükl, ISBN 978-80-7442-061-0
- 2015 **Pavlík** *Exoplanets* Astropis Special/2015, pp. 22–23
- 2012 **Pavlík**, Prouza & Ondřich *Observation of Venus transit* Astropis Special/2012, pp. 28–33
- 2012 Pavlík Asterisms Astropis 1/2012, pp. 20-21

## **CONFERENCES & LECTURES**

I gave several **invited talks/seminars/lectures**, and presented contributed talks and posters at scientific conferences. I also presented a number of **invited public talks/lectures**. Some are listed below.

#### Scientific

- 02/2024 **invited seminar** "Anisotropic stellar velocities: A key factor in star cluster evolution" University in Bologna, INAF OAS Bologna, ITA
- 01/2024 **invited seminar** "The dance of planets and dying stars" University in Pisa, ITA
- 09/2023 poster "The impact of velocity anisotropy on the dynamics of star clusters and their binary stars" ESO conference "Two in a Million", Garching, GER (*Pavlík & Vesperini*, DOI:10.5281/zenodo.8335237)
- 06/2023 **invited talk** "Doomsday dynamical scenarios" General Meeting of the Indiana Astronomical Society, Mooresville, IN, USA
- 03/2023 **guest lecture** "The dance of planets and dying stars" within the course PHYS-P 508: "Current research in physics", Indiana University, USA
- 10/2022 **invited seminar** "Using GPU-accelerated systems in studying astrophysical systems" workshop "Big Red 200 and AI Day", Indiana University Research Technologies, Bloomington, IN, USA
- 08/2022 seminar "The role of velocity anisotropy in star clusters evolution" series "Tea Talks", Indiana University, IN, USA
- 04/2022 contrib. talk "Effects of radially anisotropic velocity distribution on the dynamics of star clusters" "DDA 53<sup>rd</sup> Annual Meeting", AAS, NY, USA (*Pavlik & Vesperini*, ADS:2022DDA....5310103P)
- 04/2022 poster "Environmental influences on the dynamical evolution of star clusters in turbulent molecular clouds" "DDA 53<sup>rd</sup> Annual Meeting", AAS, NY, USA

(Suin, Shore & Pavlík, ADS:2022DDA....5310807S)

- 05/2021 **invited seminar** "Doomsday dynamical scenarios" Astronomical Inst., Charles University, Prague, CZE (authors: Pavlík & Shore)
- 05/2021 contributed talk "Energy equipartition in star clusters" "DDA 52<sup>nd</sup> Annual Meeting", AAS, online (*Pavlík & Vesperini*, ADS:2021DDA....5220103P)
- 03/2021 seminar "Close encounters of all kinds" series "Lunch Talks", Indiana University, IN, USA
- 01/2020 **invited seminar** "Life of a star cluster" series "Coffee Talk", Institute for Astronomy, University of Edinburgh, UK
- 01/2020 **invited seminar** "Mass segregation and binaries in young star clusters" series "Theory Lunch", Institute for Astronomy, University of Edinburgh, UK
- 12/2019 contributed talk "Star clusters: primordial mass segregation and binaries" "(M+4)<sup>th</sup> Aarseth *N*-body Meeting", Astronomical Inst., Charles University, Prague, CZE
- 09/2019 contributed talk "Primordial mass segregation of star clusters: The role of binary stars" Masaryk University, University Centre Telč, CZE
- 08/2019 **invited seminar** "Dynamical evolution of star clusters" Department of Physics, University in Pisa, ITA
- 12/2018 contributed talk "Do star clusters form completely mass segregated?"  $(M+3)^{rd}$  Aarseth *N*body Meeting", Astronomical Inst., Charles University, Prague, CZE
- 11/2018 invited seminar "Cosmic Calcio: BH kicks

and star clusters" Department of Physics, University in Pisa, ITA

06/2018 contributed talk "The black hole retention fraction in star clusters" "Modest-18", Santorini, GRC

05/2017 seminar "The black hole retention fraction in star clusters" Astronomical Inst., Charles University, Prague, CZE

12/2017 contributed talk "The black hole retention fraction in star clusters" " $(M+2)^{nd}$  Aarseth *N*-body Meeting", Astronomical Inst., Charles University, Prague, CZE

11/2017 **invited seminar** "Core collapse in star clusters" Sapienza, Dept. of Physics, Univ. of Rome, ITA

11/2017 **invited seminar** "Introduction to *N*-body methods" Dept. of Physics, University in Pisa, ITA

09/2017 conference poster "The black hole retention fraction in star clusters" "Modest-17", Charles University, Prague, CZE (authors: Pavlík & Jeřábková)

09/2017 contributed talk "Fitting self-similar core collapse in N-body models" "Modest-17", Charles University, Prague, CZE (authors: Pavlík & Šubr)

01/2017 seminar "Core collapse in *N*-body clusters" Astronomical Inst., Charles University, Prague, CZE

12/2016 conference poster "Fitting self-similar core collapse to *N*-body models" "Stellar aggregates over mass and spatial scales", Bad Honnef, GER (*authors: Pavlík*, Heggie & Šubr)

## **OTHER ATTENDED WORKSHOPS**

03/2020	JWST Master Class	Czech Technical University, Prague, CZE
10/2017	Astro-GR 2017	Institute of Space Sciences, Barcelona, ESP
08/2014	3rd Scientific Writing for Young Astronomers	org. by EDP Sciences in Tihany, HUN

## CERTIFICATIONS

07/2022	Teaching Science at University
5-week or	nline course authorised by University of Zurich <sup>UZH</sup>

awarded Jul 26, 2022 (grade 96.66%) verify at Coursera

## **MEMBERSHIPS**

04/2021 – present **Junior member of IAU** Division C (Education, Outreach and Heritage), Division G (Stars and Stellar Physics), Division J (Galaxies and Cosmology), Executive Committee WG Junior Members

2014 – 2016 Student representative in the Disciplinary Committee Faculty of Mathematics and Physics of Charles University, Prague, CZE

PUBLIC EDUCATION AND OUTREACH

- 11/2022 **invited talk** "Stellar Billiards Revisited" Science Cafe, Bloomington, IN, USA
- 06/2021 **invited talk** "What do we learn from the stars?" College Public Science Symposium, Indiana University Bloomington, IN, USA
- 08/2021 **invited talk** "Stellar Billiards" series "Astronomy on Tap", Bloomington, IN, USA
- 02/2019 **invited lecture** "How to retain black holes" (in Czech) Observatory in Rokycany and Plzeň, CZE
- 11/2018 **invited lecture** "Evolution of black holes in star clusters" (in Czech) series "Day with Astropis", Czech Academy of Sciences, CZE

04/2018 **invited lecture** "Black holes and star clusters" (in Czech) Senec observatory, SVK