

Aleksey Generozov

Research Associate

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[Personal website](#)

Education

- 2012-2018 **PhD, Astronomy**, *Columbia University*, New York, NY, Advisor: Brian Metzger.
Thesis: Stellar and Gas Dynamics in Galactic Nuclei
- 2008-2012 **BS Physics**, *University of California, Santa Barbara*, Santa Barbara, CA.

Research Interests

I study stellar and gas dynamics near supermassive black holes (SMBHs) via analytic and numerical methods. Some of the questions my research touches on are:

- What uniquely identifiable sources (e.g. X-ray binaries, hypervelocity stars) can be produced by collisional stellar dynamics in extreme environments?
- How do SMBHs grow and evolve over time?
- What do current radio observations say about the presence of jets/outflows in tidal disruption events?

Publications

*=Advised student

- [11] A Stream of Hypervelocity Stars from the Galactic Center
A. Generozov, 2020, Submitted to ApJ, [arXiv:2005.10267](#)
- [10] The Hills Mechanism and the Galactic Center S-Stars
A. Generozov, A.-M. Madigan, 2020, [ApJ](#), *896*, 137
- [9] Mass Segregation in Eccentric Nuclear Disks: Enhanced Tidal Disruption Event Rates for High-mass Stars
H. Foote*, **A. Generozov**, A.-M. Madigan, 2020, [ApJ](#), *890*, 175
- [8] Implications from Late-Time X-ray Detections of Optically Selected Tidal Disruption Events: State Changes, Unification, and Detection Rates
P.G. Jonker, N.C. Stone, **A. Generozov**, S. van Velzen, B.D. Metzger, 2020, [ApJ](#), *889*, 166

- [7] A generalized Bondi accretion model for the galactic centre
A. Yalinewich, R. Sari, **A. Generozov**, N.C. Stone, B.D. Metzger, 2018, [MNRAS](#), 479, 4778
- [6] An overabundance of X-ray binaries in the galactic center from tidal captures
A. Generozov, N.C. Stone, B.D. Metzger, J.P. Ostriker, 2018, [MNRAS](#), 478, 4030
- [5] The delay time distribution of tidal disruption flares
N.C. Stone, **A. Generozov**, E. Vasiliev, B.D. Metzger, 2017, [MNRAS](#), 480, 5060
- [4] The influence of circumnuclear environment on the radio emission from TDE jets
A. Generozov, P. Mimica, B.D. Metzger, N.C. Stone, D. Giannios, and M.A. Aloy, 2017, [MNRAS](#), 464, 2481
- [3] Circumnuclear media of quiescent supermassive black holes
A. Generozov, N.C. Stone and B.D. Metzger, 2015, [MNRAS](#), 453, 775
- [2] Lyman edges in supermassive black hole binaries
A. Generozov and Z. Haiman, 2014, [MNRAS](#), 443, L64
- [1] Physical properties of the inner shocks in hot, tilted black hole accretion flows
A. Generozov, O. Blaes, P. Fragile, and K. Henisey, 2014, [ApJ](#), 780, 81

Talks

The Hills Mechanism and the Galactic Center S-stars

- AAS DDA meeting, Jun 2019, Jul 2020
- CU Boulder black hole group meeting, Sep 2019

Mass Segregation and TDEs in Eccentric Nuclear Disks

- Kyoto TDE conference, Jan 2020

Formation of X-ray Binaries in the Galactic Center via Tidal Capture

- CU Boulder CASA/JILA seminar, Aug 2018
- University of Crete, Jun 2018
- Santorini MODEST workshop, Jun 2018
- Columbia Graduating Students Colloquium, May 2018
- AAS 231 (Dissertation talk), Jan 2018
- UCSC FLASH Seminar, Dec 2017
- UC Berkeley explosive astro seminar, Dec 2017
- MIT brown bag lunch seminar, Nov 2017

- *Princeton THUNCH seminar, Nov 2017*
- *IAS coffee talk, Nov 2017*
- *CIERA theory seminar, Oct 2017*
- *Harvard galaxies and cosmology seminar, Sep 2017*

Radio Emission from TDE Jets

- *Cambridge TDE17 workshop, Sep 2017*
- *NYC MODEST workshop, Sep 2016*
- *Jerusalem TDE workshop, Nov 2015*

Lyman Edges in Supermassive Black Hole Binaries

- *27th Texas relativistic astrophysics symposium, Dec 2013*

Summer schools and workshops

- 2016 ISSI workshop on tidal disruption events (invited participant), Bern, Switzerland.
- 2016 PITP summer school on astrophysical plasmas, Princeton, New Jersey.
- 2014 SciCoder workshop, New York, New York.

Teaching

- 2018 Guest lecturer, CU Boulder.
Origin and Evolution of Planetary Systems
- 2013 - 2015 Instructor for Intro Astronomy Lab, Columbia University.

Outreach

- 2019 North Colorado Astronomical Society outreach lecture.
"A Tour of the Galactic Center"
- 2018- Volunteer for PISEC at CU Boulder.
Discussed scientific careers with high school students
- 2013-2018 Columbia astronomy outreach.
Volunteer for public outreach nights, sidewalk astronomy, and family astro
- 2017 Volunteer for "Kids' Week" at the Intrepid Air and Space Museum.
Showed a demo at this event
- 2015 Columbia Astronomy outreach lecture.
"On the Care and Feeding of Black Holes"
- 2015 Volunteer for Girls Science Day.
Showed physics demos to middle-school girls
- 2014 Volunteer for Saturday Science Starters.
Showed physics demos to middle-school children

Academic service

- 2020 Session chair.
AAS DDA meeting
- 2019- Peer reviewer.
ApJ, MNRAS, ISSI
- 2019- Organizer for Dynamics Special Topics Meeting at CU Boulder.
- 2019 Reviewer for an international Research Grants Council.
- 2019- Organizer for CU Boulder Journal Club.
- 2017 Mentor for Columbia Astronomy Undergraduate Mentoring Program.
- 2015-2016 Mentor for Columbia Astronomy Graduate Mentoring Program.
- 2015-2017 Organizer of Columbia Astro-Ph Coffee.
- 2015-2016 Student Representative on Columbia Astronomy Graduate Admissions Committee.

Awards

- 2012 UCSB Academic Excellence Award, Highest Academic Honors.
- 2011 Barry M Goldwater Scholar.
- 2008-2012 UCSB Regents Scholar.

Students

- 2019- **Alexander Rodriguez**, *Undergraduate*, University of Colorado, Boulder.
- 2018-2020 **Hayden Foote (Co-advised with Ann-Marie Madigan)**, *Undergraduate*, University of Colorado, Boulder.