Gábor Rácz
Curriculum Vitae

PERSONAL DETAILS

Birth	December 8, 1989
Phone	(+36 20) 2562671
Mail	gabor.racz@ttk.elte.hu
Citizenship	Hungarian

EDUCATION

Doctoral School of Physics (PhD) 2015-2021
Eötvös Loránd University, Budapest
Particle physics and astronomy program
    Qualification: summa cum laude
    Title of dissertation: Investigating Cosmological Models with Numerical Simulations
    Supervisor: László Dobos

Physics MSc. 2013-2015
Eötvös Loránd University, Budapest
    Supervisor: István Csabai

Physics BSc. 2009-2013
Eötvös Loránd University, Budapest
    Supervisor: István Csabai

PROFESSIONAL EXPERIENCE

Postdoctoral Fellow 2022-
Jet Propulsion Laboratory, California Institute of Technology
    NASA Postdoctoral Program (NPP)
    Supervisor: Alina Kiessling

Research fellow 2020-2021
Eötvös Loránd University, Budapest, Hungary
    Department of Physics of Complex Systems
    Supervisor: Istvan Csabai

Assistant research fellow 2019-2020
Eötvös Loránd University, Budapest, Hungary
    Department of Physics of Complex Systems
    Supervisor: Istvan Csabai

Visiting postgraduate student 2019/03-2019/04
University of Hawaii, Honolulu, HI, USA
    Institute for Astronomy (IfA)
    Supervisor: István Szapudi

Visiting postgraduate student 2018/01-2018/06
Johns Hopkins University, Baltimore, MD, USA
    Department of Physics and Astronomy
    Supervisor: Alexander S. Szalay

TEACHING EXPERIENCE

Computer Simulations   2018-2020
Eötvös Loránd University, Budapest
    $\sim$ 15 student per semester

Computer-Aided Modeling Laboratory   2015-2019
Eötvös Loránd University, Budapest
    $\sim$ 5 student per semester

Digital Measurements Laboratory   2015-2018
Eötvös Loránd University, Budapest
    $\sim$ 10 student per Lab session

PAST FUNDING

Faculty Excellence Sponsorship   2019
Eötvös Loránd University, Faculty of Science
    for supporting high quality publishing activities
    1,000,000HUF

Campus Mundi Scholarship   2019
Tempus Public Foundation
    for short-term international internship
    536,960HUF

SKILLS

Programming	C/C++, C#, CUDA, Python, Julia, Bash
Experience	large HPC systems
	general purpose programming of Graphical Processing Units (GPUs)
	cosmological and astrophysical simulations (GADGET, Arepo)
Software	GNU/Linux and UNIX systems, git, LaTeX, GNU octave
	MATLAB and gnuplot

LANGUAGES

    English B2 (fluent)
    German B1
    Finnish A2
    Hungarian (native)

LIST OF PUBLICATIONS

- **The anisotropy of the power spectrum in periodic cosmological simulations**, 2020, G. Rácz, I. Szapudi, I. Csabai, L. Dobos *Monthly Notices of the Royal Astronomical Society* 503 (4), 5638–5645

- **A common explanation of the Hubble tension and anomalous cold spots in the CMB**, 2020, A. Kovács, R. Beck, I. Szapudi, I. Csabai, G. Rácz, L. Dobos *Monthly Notices of the Royal Astronomical Society* 499 (1), 320-333

- **StePS: A Multi-GPU Cosmological N-body Code for Compactified Simulations**, 2019, G. Rácz, I. Szapudi, L. Dobos, I. Csabai, A. S. Szalay *Astronomy and Computing 28, [100303]*.

- **The integrated Sachs-Wolfe effect in the AvERA cosmology**, 2018, R. Beck, I. Csabai, G. Rácz, I. Szapudi *Monthly Notices of the Royal Astronomical Society* 479, 3582-3591

- **Compactified Cosmological Simulations of an Infinite Universe**, 2018, G. Rácz, I. Szapudi, I. Csabai, L. Dobos *Monthly Notices of the Royal Astronomical Society* 477, 1949-1957

- **Concordance cosmology without dark energy**, 2017, G. Rácz, L. Dobos, R. Beck, I. Szapudi, I. Csabai *Monthly Notices of the Royal Astronomical Society: Letters* 469 (1), L1-L5

- **Main-belt Asteroids in the K2 Engineering Field of View**, 2015, R. Szabó, K. Sárneczky, Gy. M. Szabó, A. Pál, Cs. P. Kiss, B. Csák, L. Illés, G. Rácz, L. L. Kiss *The Astronomical Journal* 149 (3), 112

PREPRINTS

- **The nonlinear power spectrum overdensity-response**, 2021, G. Rácz, I. Szapudi, I. Csabai, L. Dobos *arXiv* eprint arXiv:2105.14489
  `https://arxiv.org/abs/2105.14489`

Updated: December 7, 2021