

Bence Bécsy

Curriculum Vitae

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Education

- 2016–present **MSc in Physics**, *Eötvös Loránd University*, Budapest, Hungary.
- 2013–2016 **BSc in Physics**, *Eötvös Loránd University*, Budapest, Hungary.
Degree classification: outstanding
Thesis: „Extracting astrophysical information from detections of gravitational-wave bursts” (in Hungarian)
Advisor: Peter Raffai, Assistant professor at Eötvös Loránd University
- 2005–2013 **High school**, *Vörösmarty Mihály High School*, Érd, Hungary.

Positions

- July-August 2017 **Summer student**, *Massachusetts Institute of Technology*, Cambridge, MA, USA.

Scholarships and awards

- December 2017 1st prize, Science Workshop of the Eötvös University in Physics, Particle- and Astrophysics Section
- 2017 Student-Scholar of the Hungarian Republic Award
- 2017-2018 New National Excellence Program of the Ministry of Human Capacities (research grant)
- May 2017 1st prize, NyIFFF National Team Competition of Experimental Physics
- September 2016 2nd prize, NyIFFF National Team Competition of Experimental Physics
- 2016-2017 New National Excellence Program of the Ministry of Human Capacities (research grant)
- 2016 Student-Scholar of the Hungarian Republic Award
- 2016 Junior Templeton Fellow
- September 2015 3rd prize, NyIFFF National Team Competition of Experimental Physics
- April 2015 Honorable Mention, National College Science Workshop
- 2015 Student-Scholar of the Hungarian Republic Award
- 2015 Excellence in Undergradual Studies Award, Eötvös University, Faculty of Sciences
- December 2014 3rd prize, Science Workshop of the Eötvös University in Physics, Theoretical Physics Section

- November 2014 Honorable mention, Ortway International College Competition in Physics
- 2014 Scholarship of the Prime Minister of Hungary
- December 2013 Student excellence of Érd award
- August 2013 Silver medal, 7th International Olympiad on Astronomy and Astrophysics, Greece
- 2013 Scholarship of the Prime Minister of Hungary
- December 2012 Student excellence of Érd award
- August 2012 Bronze medal, 6th International Olympiad on Astronomy and Astrophysics, Brazil

Languages

- Hungarian Mother tongue
- English Advanced (TOEFL iBT 113/120; ECL level C1 certificate)
- French Basic

Computer skills

- Operating systems Linux, Windows
- Programming Python, Jupyter, Matlab, C, shell script
- Word processing L^AT_EX, LibreOffice, MS Word
- Other Stellarium, InkScape, Gimp, Darktable, Orange Data Mining, git

Conference Participation

- May 2017 Talk at the Új Nemzeti Kiválóság Program Konferencia, Budapest, Hungary, „Gravitációshullám-kitörésekkel asztrofizikai kérdések nyomában” (in Hungarian)
- April 2017 Talk at the XVIII. Eötvös Konferencia, Budapest, Hungary, „Gravitációshullám-kitörések tulajdonságainak meghatározása” (in Hungarian)
- March 2017 Talk at the 2017 March LVC Meeting, Pasadena, USA, „BayesWave Parameter Estimation and Model-Independent Constraints on the Source”
- September 2016 Participation in the 2016 September LVC Meeting, Glasgow, Scotland
- March 2016 Talk at the 2016 March LVC Meeting, Pasadena, USA, „BayesWave parameter estimation performance study”
- September 2015 Poster at the 2015 September LVC Meeting, Budapest, Hungary, „Testing globular cluster models with future detections of gravitational waves from eccentric black hole binaries”
- August 2014 Talk at the International Conference of Physics Students, Heidelberg, Germany, „Why do pulsars glitch?”

Summer school and workshop participation

- September 2017 IMPRS Summer School 2017: Compact Objects & Gravitational Waves, Heidelberg, Germany
- October 2016 Workshop on researcher's competences, Benczúr Hotel, Budapest
- September 2016 IMPRS Summer School 2016: Astrostatistics & Data Mining, Heidelberg, Germany
- August 2016 Data Science workshop, Eötvös Loránd University, Budapest, Hungary

Professional activities

- 2017 LVC Electromagnetic Follow-up advocate shifts
- 2016-present LIGO Scientific Collaboration long-term member (authorship on collaboration papers)
- 2014-2016 LIGO Scientific Collaboration undergraduate member

Public outreach talks

- November 2017 Outreach talk at the Budapest University of Technology's Szent-Györgyi Albert Szakkollégium, Budapest
- April 2017 Outreach talk about LIGO at the Astronomical Club of Érd, Érd
- February 2017 Outreach talk at the Dürer Verseny (science competition for high school students), Miskolc
- November 2016 Outreach talk at the Alumni Meeting of Vörösmarty Mihály High School, Érd
- September 2016 Outreach talk at the Night of Researchers about the LIGO discovery, Eötvös Loránd University, Budapest
- August 2016 Outreach talk about the LIGO discovery at the XVI. Kiskun-Neptunusz Observing Astronomy Camp, Jászszentlászló
- April 2016 Outreach talk about the LIGO discovery at the Eötvös College Scientific Evening, Eötvös József College, Budapest
- March 2016 Outreach talk about the LIGO discovery at Városmajori High School, Budapest
- March 2016 Outreach talk about the LIGO discovery at Polaris Observatory, Budapest
- February 2016 Outreach talk for high school students about the LIGO discovery at Vörösmarty Mihály High School, Érd
- January 2016 Outreach talk and workshop about gravitational waves for high school students at Eötvös József College, Budapest
- November 2015 Outreach talk at Polaris Observatory, Budapest, „Gravitational Waves: a new window to the Universe”
- December 2014 Outreach talk for 5th grade students at Vörösmarty Mihály High School, Érd

Education and outreach activities

- 2014-present Co-leading the astrophysical and astronomical study group for high school students
- 2014-present Preparing the Hungarian team for the International Olympiad on Astronomy and Astrophysics
- December 2017 Organising a conference for high school students on continuing education, III. Vörösmarty Mihály High School Alumni Conference, Érd
- July 2017 Organising a weekend workshop for astronomy Olympians, Eötvös József College, Budapest
- December 2016 Participation at the 10th International Olympiad on Astronomy and Astrophysics as an observer, India
- December 2016 Organising a conference for high school students on continuing education, II. Vörösmarty Mihály High School Alumni Conference, Érd
- June 2016 Organising a weekend workshop for astronomy Olympians, Eötvös József College, Budapest
- December 2015 Organising a conference for high school students on continuing education, I. Vörösmarty Mihály High School Alumni Conference, Érd
- June 2015 Co-leading the Hungarian team on the 1th Regional Mini-Olympiade on Astronomy

Publications

Refereed publications

B. Bécsy, P. Raffai, N. J. Cornish, R. Essick, J. Kanner, E. Katsavounidis, T. B. Littenberg, M. Millhouse, and S. Vitale. Parameter Estimation for Gravitational-wave Bursts with the BayesWave Pipeline. *ApJ*, 839:15, April 2017.

LIGO Scientific Collaboration publications I made notable contributions to

B. P. Abbott, ..., **B. Bécsy**, and et al. Prospects for Observing and Localizing Gravitational-Wave Transients with Advanced LIGO and Advanced Virgo. *Living Reviews in Relativity*, 19:1, February 2016.

As member of the LIGO Scientific Collaboration

B. P. Abbott, ..., **B. Bécsy**, and et al. On the Progenitor of Binary Neutron Star Merger GW170817. *ApJ Letters*, 850:L40, December 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. Estimating the Contribution of Dynamical Ejecta in the Kilonova Associated with GW170817. *ApJ Letters*, 850:L39, December 2017.

A. Albert, ..., **B. Bécsy**, and et al. Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory. *ApJ Letters*, 850:L35, December 2017.

- B. P. Abbott, ..., **B. Bécsy**, and et al. A gravitational-wave standard siren measurement of the Hubble constant. *Nature*, 551:85–88, November 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. GW170608: Observation of a 19-solar-mass Binary Black Hole Coalescence. *ArXiv e-prints*, November 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral. *Physical Review Letters*, 119(16):161101, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence. *Physical Review Letters*, 119(14):141101, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. Search for post-merger gravitational waves from the remnant of the binary neutron star merger GW170817. *ArXiv e-prints*, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory. *ArXiv e-prints*, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. On the Progenitor of Binary Neutron Star Merger GW170817. *ArXiv e-prints*, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. GW170817: Implications for the Stochastic Gravitational-Wave Background from Compact Binary Coalescences. *ArXiv e-prints*, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. Estimating the Contribution of Dynamical Ejecta in the Kilonova Associated with GW170817. *ArXiv e-prints*, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. First narrow-band search for continuous gravitational waves from known pulsars in advanced detector data. *ArXiv e-prints*, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A. *ApJ Letters*, 848:L13, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. Multi-messenger Observations of a Binary Neutron Star Merger. *ApJ Letters*, 848:L12, October 2017.
- B. P. Abbott, ..., **B. Bécsy**, and et al. All-sky search for periodic gravitational waves in the O1 LIGO data. *Phys Rev D*, 96(6):062002, September 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. First search for nontensorial gravitational waves from known pulsars. *ArXiv e-prints*, September 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. Upper Limits on Gravitational Waves from Scorpius X-1 from a Model-based Cross-correlation Search in Advanced LIGO Data. *ApJ*, 847:47, September 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. Search for intermediate mass black hole binaries in the first observing run of Advanced LIGO. *Phys Rev D*, 96(2):022001, July 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. First low-frequency Einstein@Home all-sky search for continuous gravitational waves in Advanced LIGO data. *ArXiv e-prints*, July 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2. *Physical Review Letters*, 118(22):221101, June 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. Search for gravitational waves from Scorpius X-1 in the first Advanced LIGO observing run with a hidden Markov model. *Phys Rev D*, 95(12):122003, June 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. Upper Limits on Gravitational Waves from Scorpius X-1 from a Model-Based Cross-Correlation Search in Advanced LIGO Data. *ArXiv e-prints*, June 2017.

B. P. Abbott, ..., **B. Bécsy**, and et al. Search for Gravitational Waves Associated with Gamma-Ray Bursts during the First Advanced LIGO Observing Run and Implications for the Origin of GRB 150906B. *ApJ*, 841:89, June 2017.

Conference proceedings

P. Raffai, **B. Bécsy**, Z. Haiman, and Z. Frei. A Statistical Method for Detecting Gravitational Recoils of Supermassive Black Holes in Active Galactic Nuclei. In *IAU Symposium*, volume 324 of *IAU Symposium*, pages 227–230, 2017.

B. Bécsy and P. Raffai. Gravitációshullám-kitörések tulajdonságainak meghatározása (in Hungarian). In *Adsumus (Proceedings of Eötvös Konferencia)*, in press.

Scientific outreach papers

B. Bécsy, G. Dályá, and P. Raffai. Interferométerekkel a gravitációs hullámok nyomában (in Hungarian). *Természet Világa*, 147. évfolyam, 3. szám, 2016.

G. Dályá, **B. Bécsy**, and P. Raffai. GW150914: először hallottuk az univerzum zenéjét (in Hungarian). *Meteor*, XLVI. évfolyam 3. (480.) szám, 2016.

B. Bécsy, G. Dálya, and P. Raffai. Összeütköző neutroncsillagok megfigyelése gravitációs hullámokkal és fénnel (in Hungarian). *Meteor*, in press.

G. Dálya and **B. Bécsy**. A gravitációshullám-asztrófizika megszületése (in Hungarian). *Meteor Csillagászati Évkönyv*, in press.