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EMPLOYMENT

Institute for Advanced Study, Princeton, NJ
Long-term Member, 2011–2016

EDUCATION

Ph.D., Physics, May 2011
New York University, New York, NY
Dissertation: *Dynamical Inference in the Milky Way*, advisor: David W. Hogg
Postgraduate Studies in Logic, History and Philosophy of Science (~ 1 yr MA), September 2006
Universiteit Gent, Belgium
Master, Physics, *magna cum laude*, June 2005
Katholieke Universiteit Leuven, Belgium
Master, Mathematics, *cum laude*, June 2005
Katholieke Universiteit Leuven, Belgium

HONORS, FELLOWSHIPS, AND SCHOLARSHIPS

John N. Bahcall Fellowship, 2014–2016
Sofja Kovalevskaja Award, Alexander von Humboldt Foundation, 2014 (declined)
Hubble Postdoctoral Fellowship, 2011–2014
Dean's Outstanding Dissertation Award, New York University, 2012
Dr. Pliny A. and Margaret H. Price Prize in Cosmology and AstroParticle Physics, Ohio State University, 2010
Horizon Dissertation Writing Fellowship, GSAS, New York University, 2010–2011
Horizon Fellowship in the Natural and Physical Sciences, GSAS, New York University, 2009
Henry M. MacCracken Scholarship at New York University, 2006–2011
Honorary Fellow of the Belgian American Educational Foundation (BAEF), 2006–2007
ERASMUS exchange program scholarship, Ludwig-Maximilians Universität München/ Max-Planck Institut für Physik München, 2005

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

Survey Leadership and Involvement:

SDSS-III BOSS Architect (2011 onwards)
 External Participant of *SDSS-III* (2011 onwards)
 Member of the *SDSS-III BOSS* quasar target selection team (2010 to 2014)
 APOGEE-2 Disk Working Group Co-Chair in *SDSS-IV* (2013 to 2014)
 APOGEE-1 Science Working Group Chair (04/2014 to 07/2015)

Refereeing and Panel Review:

Referee for: *Annalen der Physik*, the *Astronomical Journal*, *Astronomy & Astrophysics*, the *Astrophysical Journal*, the *Journal of the American Statistical Association*, the *Journal for Cosmology and Astroparticle Physics*, *Physical Review Letters*, and the *Monthly Notices of the Royal Astronomical Society*
 HST Cycle 21 Reviewer (2013)
 NASA Earth and Space Science Fellowship Program 2014 External Reviewer (2014)

Seminar and Conference Organization:

IAS Formal Seminar organizer (2012 to 2013)
 Co-coordinator for KITP program, “Galactic Archaeology and Precision Stellar Astrophysics” (Jan. to Mar. 2015)
 SOC chair, KITP conference, “The Milky Way and its stars: stellar astrophysics, Galactic archeology, and stellar populations” (Feb. 2 – 6, 2015)
 SOC chair, workshop “Stellar Streams in the Local Universe”, Ringberg Caste (July 20 – 24, 2015)

STUDENT MENTORING

Yuan-Sen Ting, MPIA/CfA Harvard (2012-2013; pub. 37 below)
 Wilma Trick, MPIA (2013-present)

PUBLICATIONS

REVIEW ARTICLES

34. Hans-Walter Rix & **Jo Bovy**, The Milky Way’s stellar disk: mapping and modeling the Galactic disk, *Astron. Astrophys. Rev.* **21**, 61 (2013) arXiv:1301.3168 [astro-ph.GA].

REFEREED PUBLICATIONS

49. Marc Pinsonneault, et al., The APOKASC Catalog: An asteroseismic and spectroscopic joint survey of targets in the Kepler fields, *Astrophys. J. Supp.*, *in press* (2014).
48. **Jo Bovy**, Dynamical modeling of tidal streams, *Astrophys. J.*, *in press* (2014) arXiv:1401.2985 [astro-ph.GA].
47. Thaïse S. Rodrigues, Léo Girardi, Andrea Miglio, Diego Bossini, **Jo Bovy**, et al., Bayesian distances and extinctions for giants observed by *Kepler* and APOGEE, *Mon. Not. Roy. Astron. Soc.*, *in press* (2014) arXiv:1410.1350 [astro-ph.SR].

46. David L. Nidever, **Jo Bovy**, et al., Tracing chemical evolution over the extent of the Milky Way's disk with APOGEE red clump stars, *Astrophys. J.*, *in press* (2014) arXiv:1409.3566 [astro-ph.GA].
45. Sarah R. Loebman, Željko Ivezić, Thomas R. Quinn, **Jo Bovy**, Charlotte R. Christensen, Mario Jurić, Rok Roškar, Alyson M. Brooks, & Fabio Governato, The Milky Way tomography with SDSS. V. Mapping the dark matter halo, *Astrophys. J.* **794**, 151 (2014) arXiv:1408.5388 [astro-ph.GA].
44. **Jo Bovy**, et al., The APOGEE red-clump catalog: Precise distances, velocities, and high-resolution elemental abundances over a large area of the Milky Way's disk, *Astrophys. J.* **790**, 12 (2014) arXiv:1405.1032 [astro-ph.GA].
43. Michael R. Hayden, Jon A. Holtzman, **Jo Bovy**, et al., Chemical cartography with APOGEE: Large-scale mean metallicity maps of the Milky Way, *Astron. J.* **147**, 116 (2014) arXiv:1311.4569 [astro-ph.GA].
42. Christopher P. Ahn, et al., The tenth Data Release of the Sloan Digital Sky Survey: first spectroscopic data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment, *Astrophys. J. Supp.* **211**, 17 (2014) arXiv:1307.7735 [astro-ph.IM].
41. Isabelle Pâris, et al., The Sloan Digital Sky Survey quasar catalog: tenth data release, *Astron. & Astrophys.* **563**, A54 (2014) arXiv:1311.4870 [astro-ph.CO].
40. **Jo Bovy** & Hans-Walter Rix, A direct dynamical measurement of the Milky Way's disk surface density profile, disk scale length, and dark matter profile at $4 \text{ kpc} \lesssim R \lesssim 9 \text{ kpc}$, *Astrophys. J.* **779**, 115 (2013) arXiv:1309.0809 [astro-ph.GA].
39. J. Xavier Prochaska, Joseph F. Hennawi, Khee-Gan Lee, Sebastiano Cantalupo, **Jo Bovy**, S.G. Djorgovski, Sara L. Ellison, Marie Wingyee Lau, Crystal L. Martin, Adam Myers, Kate H.R. Rubin, & Robert A. Simcoe, Quasars Probing Quasars VI. Excess HI Absorption within One Proper Mpc of $z \sim 2$ Quasars, *Astrophys. J.* **776**, 136 (2013) arXiv:1308.6222 [astro-ph.CO].
38. G. S. Stinson, **J. Bovy**, H.-W. Rix, C. Brook, R. Roškar, J. D.alcanton, A. V. Macciò, J. Wadsley, H. M. P. Couchman, & T. R. Quinn, MaGICC Thick Disk I: Comparing a Simulated Disk Formed with Stellar Feedback to the Milky Way, *Mon. Not. Roy. Astron. Soc.* **436**, 625 (2013) arXiv:1301.5318 [astro-ph.GA].
37. Yuan-Sen Ting, Hans-Walter Rix, **Jo Bovy**, & Glenn van de Ven, On the study of Galactic potential via action-based mono-abundance stars distribution function, *Mon. Not. Roy. Astron. Soc.* **434**, 652 (2013) arXiv:1212.0006 [astro-ph.GA].
36. Nicholas P. Ross, et al., The SDSS-III Baryon Oscillation Spectroscopic Survey: The quasar luminosity function from data release nine, *Astrophys. J.* **773**, 14 (2013) arXiv:1210.6389 [astro-ph.CO].
35. Lan Zhang, Hans-Walter Rix, Glenn van de Ven, **Jo Bovy**, Chao Liu, & Gang Zhao, The gravitational potential near the Sun from SEGUE K-dwarf kinematics, *Astrophys. J.* **772**, 108 (2013) arXiv:1209.0256 [astro-ph.GA].
33. Anže Slosar, et al., Measurement of baryon acoustic oscillations in the Lyman-alpha forest fluctuations in BOSS Data Release 9, *J. Cosmol. Astropart. Phys.* **4**, 26 (2013) arXiv:1301.3459 [astro-ph.CO].
32. Nicolás G. Busca, et al., Baryon Acoustic Oscillations in the Ly α forest of BOSS quasars, *Astron. & Astrophys.* **552**, A96 (2013) arXiv:1211.2616 [astro-ph.CO].
31. **Jo Bovy** & Cora Dvorkin, Low-mass suppression of the satellite luminosity function due to the supersonic baryon-cold-dark-matter relative velocity, *Astrophys. J.* **768**, 70 (2013) arXiv:1205.2083 [astro-ph.CO].
30. Deokkeun An, Timothy C. Beers, Jennifer A. Johnson, Marc H. Pinsonneault, Young Sun Lee, **Jo Bovy**, Željko Ivezić, Daniela Carollo, & Matthew Newby, The stellar metallicity distribution function of the Galactic halo from SDSS photometry, *Astrophys. J.* **763**, 65 (2013) arXiv:1211.7073 [astro-ph.GA].
29. Kyle S. Dawson, et al., The Baryon Oscillation Spectroscopic Survey of SDSS-III, *Astron. J.* **145**, 10 (2013) arXiv:1208.0022 [astro-ph.CO].
28. Isabelle Pâris, et al., The Sloan Digital Sky Survey quasar catalog: ninth data release, *Astron. & Astrophys.* **548**, 66 (2012) arXiv:1210.5166 [astro-ph.CO].
27. **Jo Bovy** et al., The Milky Way's circular velocity curve between 4 and 14 kpc from APOGEE data, *Astrophys. J.* **759**, 131 (2012) arXiv:1209.0759 [astro-ph.GA].
26. Christopher P. Ahn, et al., The ninth data release of the Sloan Digital Sky Survey: first spectroscopic

- data from the SDSS-III Baryon Oscillation Spectroscopic Survey, *Astrophys. J. Supp.* **203**, 21 (2012) arXiv:1207.7137 [astro-ph.IM].
25. **Jo Bovy** & Scott Tremaine, On the local dark matter density, *Astrophys. J.* **756**, 89 (2012) arXiv:1205.4033 [astro-ph.GA].
 24. **Jo Bovy**, Hans-Walter Rix, David W. Hogg, Timothy C. Beers, Young Sun Lee, & Lan Zhang, The vertical motions of mono-abundance sub-populations in the Milky Way disk, *Astrophys. J.* **755**, 115 (2012) arXiv:1202.2819 [astro-ph.GA].
 23. Martin White, et al., The clustering of intermediate redshift quasars as measured by the Baryon Oscillation Spectroscopic Survey, *Mon. Not. Roy. Astron. Soc.* **424**, 933 (2012) arXiv:1203.5306 [astro-ph.CO].
 22. **Jo Bovy**, Hans-Walter Rix, Chao Liu, David W. Hogg, Timothy C. Beers, & Young Sun Lee, The spatial structure of mono-abundance sub-populations of the Milky Way disk, *Astrophys. J.* **753**, 148 (2012) arXiv:1111.1724 [astro-ph.GA].
 21. **Jo Bovy**, Hans-Walter Rix, & David W. Hogg, The Milky Way has no distinct thick disk, *Astrophys. J.* **751**, 131 (2012) arXiv:1111.6585 [astro-ph.GA].
 20. **Jo Bovy**, et al., Photometric redshifts and quasar probabilities from a single, data-driven generative model, *Astrophys. J.* **749**, 41 (2012) arXiv:1105.3975 [astro-ph.CO].
 19. Nicholas P. Ross, Adam D. Myers, Erin S. Sheldon, Christophe Yèche, Michael A. Strauss, **Jo Bovy**, et al., The *SDSS-III* Baryon Oscillation Spectroscopic Survey: Quasar target selection for Data Release Nine, *Astrophys. J. Supp.* **199**, 3 (2012) arXiv:1105.0606 [astro-ph.CO].
 18. Daniela Carollo, Timothy C. Beers, **Jo Bovy**, et al., Carbon-enhanced metal-poor stars in the inner and outer halo components of the Milky Way, *Astrophys. J.* **744**, 195 (2012) arXiv:1103.3067 [astro-ph.GA].
 17. Kasper B. Schmidt, Hans-Walter Rix, Joseph C. Shields, Matthias Knecht, David W. Hogg, Dan Maoz, & **Jo Bovy**, The color variability of quasars, *Astrophys. J.* **744**, 147 (2012) arXiv:1109.6653 [astro-ph.CO].
 16. Daniel J. Eisenstein, et al., *SDSS-III*: Massive spectroscopic surveys of the distant Universe, the Milky Way Galaxy, and extra-solar planetary systems, *Astron. J.* **142**, 72 (2011) arXiv:1101.1529 [astro-ph.IM].
 15. Dmitry Malyshev, **Jo Bovy**, & Ilias Cholis, Spherical harmonics analysis of Fermi gamma-ray data and the Galactic dark matter halo, *Phys. Rev. D* **84**, 023013 (2011) arXiv:1007.4556 [astro-ph].
 14. **Jo Bovy**, David W. Hogg, & Sam T. Roweis, Extreme deconvolution: inferring complete distribution functions from noisy, heterogeneous and incomplete observations, *Ann. Appl. Stat.* **5**, 2B, 1657 (2011) arXiv:0905.2979 [stat.ME].
 13. Hiroaki Aihara, et al., The eighth data release of the Sloan Digital Sky Survey: first data from SDSS-III, *Astrophys. J. Supp.* **193**, 29 (2011) arXiv:1101.1559 [astro-ph]; Erratum *Astrophys. J. Supp.* **195**, 26 (2011).
 12. **Jo Bovy**, et al., Think outside the color box: probabilistic target selection and the *SDSS-XDQSO* quasar targeting catalog, *Astrophys. J.* **729**, 141 (2011) arXiv:1011.6392 [astro-ph].
 11. David W. Hogg, Adam D. Myers, & **Jo Bovy**, Inferring the eccentricity distribution, *Astrophys. J.* **725**, 2166 (2010) arXiv:1008.4146 [astro-ph].
 10. **Jo Bovy**, Tracing the Hercules stream around the Galaxy, *Astrophys. J.* **725**, 1676 (2010) arXiv:1006.0736 [astro-ph].
 9. **Jo Bovy** & David W. Hogg, The velocity distribution of nearby stars from Hipparcos data II. The nature of the low-velocity moving groups, *Astrophys. J.* **717**, 617 (2010) arXiv:0912.3262 [astro-ph].
 8. **Jo Bovy**, Iain Murray, & David W. Hogg, Dynamical inference from a kinematic snapshot: The force law in the Solar System, *Astrophys. J.* **711**, 1157 (2010) arXiv:0903.5308 [astro-ph].
 7. **Jo Bovy**, David W. Hogg, & Hans-Walter Rix, Galactic masers and the Milky Way circular velocity, *Astrophys. J.* **704**, 1704 (2009) arXiv:0907.5423 [astro-ph].
 6. **Jo Bovy**, David W. Hogg, & Sam T. Roweis, The velocity distribution of nearby stars from Hipparcos data I. The significance of the moving groups, *Astrophys. J.* **700**, 1794 (2009) arXiv:0905.2980 [astro-ph].
 5. **Jo Bovy**, Substructure boosts to dark matter annihilation from Sommerfeld enhancement, *Phys. Rev. D* **79**, 083539 (2009) arXiv:0903.0413 [astro-ph].

4. Surhud More, **Jo Bovy**, & David W. Hogg, Cosmic transparency: A test with the baryon acoustic feature and type Ia supernovae, *Astrophys. J.* **696**, 1727 (2009) arXiv:0810.5553 [astro-ph].
3. **Jo Bovy** & Glennys R. Farrar, Connection between a possible fifth force and the direct detection of dark matter, *Phys. Rev. Lett.* **102**, 101301 (2009) arXiv:0807.3060 [hep-ph].
2. **Jo Bovy**, David W. Hogg, & John Moustakas, The transparency of galaxy clusters, *Astrophys. J.* **688**, 198 (2008) arXiv:0805.1200 [astro-ph].
1. **Jo Bovy**, Dieter Lüst, & Dimitrios Tsimpis, $N = 1, 2$ Supersymmetric vacua of *IIA* supergravity and $SU(2)$ structures, *J. High Energy Phys.* **08**, 056 (2005) arXiv:hep-th/0506160.

PUBLICATIONS IN PREPARATION

- Jo Bovy**, *galpy*: A python library for galactic dynamics, *Astrophys. J. Supp.*, *submitted* (2014).
 Nina Hernitschek, Hans-Walter Rix, **Jo Bovy**, & Eric Morganson, Estimating black hole masses in hundreds of quasars, *Astrophys. J.*, *submitted* (2014).
 Timothée Delubac, et al., Baryon Acoustic Oscillations in the $Ly\alpha$ forest of BOSS DR11 quasars, *Astron. & Astrophys.*, *submitted* (2014) arXiv:1404.1801 [astro-ph.CO].

UNREFEREED PUBLICATIONS

- Jo Bovy**, Constraining dynamical models with observational data, in Setting the scene for Gaia and LAMOST, Proceedings of the International Astronomical Union, IAU Symposium, **298**, 185 (2014) DOI.
 David W. Hogg, **Jo Bovy**, & Dustin Lang, Data analysis recipes: Fitting a model to data (2010) arXiv:1008.4686 [astro-ph].
Jo Bovy, The self-energy of the electron: a quintessential problem in the development of QED (2006) arXiv:physics/0608108.

MISCELLANEOUS

- Jo Bovy**, 2010–current, *galpy* Galactic dynamics codebase, BSD license,
 (<http://github.com/jobovy/galpy>; <http://galpy.readthedocs.org/en/latest/>).
Jo Bovy, David W. Hogg, & Sam Roweis, 2009, *extreme-deconvolution* codebase, BSD license,
 (<http://code.google.com/p/extreme-deconvolution/>).

TEACHING EXPERIENCE

- Lecturer**, SLAC Summer Institute “Shining Light on Dark Matter”, 2014
 Lecture: *Dark matter in the Milky Way*
- Invited Speaker and Teaching Assistant**, International Max Planck Research School for Astronomy and Cosmic Physics at the University of Heidelberg (IMPRS-HD), 2009
 Topic: *Statistical Inferences from Astrophysical Data*
 Science talk “Inference in action: the force law in the Solar System” and preparation and assistance of lab exercises at a summer school aimed at graduate students and postdocs
- Teaching Assistant**, Department of Physics, New York University, 2007-2008
 Modern Physics I+II, Spring/Fall 2008
 Taught both the lab and recitation section for an introductory course in special relativity and quantum

mechanics.

General Physics I+II, Spring 2007/Fall 2007/Summer 2008

Taught lab and recitation sections, prepared recitation problem sets.

TALKS

list available upon request