

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Dragan Huterer, associate professor of physics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of physics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

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| Ph.D. | 2001 | University of Chicago |
| B.S. | 1996 | Massachusetts Institute of Technology |

Professional Record:

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| 2012 – present | Associate Professor, Department of Physics, University of Michigan |
| 2007 – 2012 | Assistant Professor, Department of Physics, University of Michigan |
| 2004 – 2007 | National Science Foundation Post-doctoral Fellow, Kavli Institute for Cosmological Physics, University of Chicago |
| 2001 – 2004 | Research Associate, Department of Physics, Case Western Reserve University |

Summary of Evaluation:

Teaching – Professor Huterer has taught both undergraduate and graduate level courses that span the range from introductory mechanics to advanced cosmology. His teaching style embraces a broad range of approaches, varying from Fermi-style approximations to numerical computational methods as well as analytical mathematics. Students appreciate his logical clarity and organization as well as his easy accessibility. He has mentored and supported five post-doctoral fellows and seven graduate students (of whom five have received Ph.D.s and two are currently working toward them). He has also mentored twelve undergraduates in research. Beyond formal teaching, Professor Huterer has participated in several outreach events, such as an appearance on a TV science documentary series narrated by Morgan Freeman.

Research – Professor Huterer, a theoretical cosmologist, is primarily focused on understanding the nature of the early universe and the implications of a variety of observations that all suggest the existence of Dark Energy. These are subjects that resonate strongly with the interests of a number of experimentalists in our department who are actively improving such measurements and are benefitting substantially from his insights. Professor Huterer's publication record over the past five years has been excellent. He has produced over 50 publications while at Michigan, received more than 7500+ citations, and has an h-index of 41. Professor Huterer currently has two major research grants from the Department of Energy and the National Aeronautics and Space Administration totaling over \$600,000. He is a frequent invited speaker and has written several classic review articles.

Recent and Significant Publications:

“Peeling off the late universe: Reconstructing the ISW map with galaxy surveys,” with J. Muir, *Physical Review D*, 94, 2016, p. 043503.

“No evidence for bulk velocity from type Ia supernovae,” with D. L. Shafer and F. Schmidt, *Journal of Cosmology and Astroparticle Physics*, 15(12), 2015, p. 033.

E.J. Ruiz and D. Huterer, “Banana split: Testing the dark energy consistency with geometry and growth,” with E. J. Ruiz, *Physical Review D*, 91, 2015, p. 063009.

“Calibration errors unleashed: Effects on cosmological parameters and requirements for large-scale structure surveys,” with C. Cunha and W. Fang, *Monthly Notices of the Royal Astronomical Society*, 432, 2013, p. 2945.

Service – Professor Huterer has been an advisor for both the Department of Energy Cosmic Frontier program and the NASA FIRST mission. He played a major role in organizing COSMO-16, a five-day conference in Ann Arbor that included about 250 participants. He is currently an editor of *Astroparticle Physics* and typically delivers eight invited seminars or colloquia per year at other institutions. Locally, he has served on a number of important departmental committees, including the executive committee.

External Reviewers:

Reviewer (A)

“...Dragan can be counted on to deliver carefully-considered insights into the highest level discussions. ... I fully expect him to play a significant leadership role in the coming decades of cosmological survey science...”

Reviewer (B)

“Dragan has an extensive research portfolio in statistical cosmology and is well-known nationally and internationally for his work on dark energy. I am happy to recommend that the University of Michigan promote him to the rank of Professor.”

Reviewer (C)

“He is well recognized for his contributions to understanding the dark energy which accelerates the expansion, especially in providing the connections between theory and observations. ... Dragan is also a recognized authority on anomalies in CMB temperature maps on large angular scales.”

Reviewer (D)

“...I’m surprised to hear that he is not yet a full professor! Huterer has been a force in cosmology ever since his graduate-student days. ... It is rare, regardless of what I may be thinking about, that Huterer’s work does not cross my radar screen.”

Reviewer (E)

“His papers are often ahead of the others by years, paving the ways to move forward. In a number of ways, Dragan’s papers tell the community what to do to study dark energy, and how to do it properly with the observational data. The combined impacts of his papers on dark energy-related issues are tremendous, and only few can match his accomplishments.”

Reviewer (F)

“Overall Dragan has amassed an impressive record of phenomenology in fundamental cosmology. I can also see that he has fully embraced the role as teacher and mentor to a new generation of researchers in this exciting field.”

Reviewer (G)

“His studies of the CMB anomalies supersede rival claims of their significance, and are masterly displays both of observational analysis of complementary data sets and of novel statistical probes. ... He has written significant papers on comparing the standard cosmological model with dark energy formulations that generalise the cosmological constant and, if detected, would herald radically new physics. He developed a unique probe of the very early universe via primordial nongaussianity. More generally, he has greatly contributed to modern precision cosmology, and many of his papers are internationally recognised, as is apparent from his record of invited lectures and participation in international conferences.”

Reviewer (H)

“...Huterer has been one of the leaders in the investigation of large angular scale anomalies in the CMB. ... He and his students are focusing on important issues...”

Reviewer (I)

“He is a provisional member of the Dark Energy Survey, and a member of the DESI collaboration. ...[his] excellent papers are among the evidence that over the years Dragan has continued to be adept at identifying research problems that play to his considerable skills.”

Summary of Recommendation:

Professor Huterer has shown the highest intellectual quality, productivity, and leadership in creating and disseminating knowledge in physics. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Dragan Huterer be promoted to the rank of professor of physics, with tenure, College of Literature Science and the Arts.



Andrew D. Martin, Dean
Professor of Political Science and Statistics
College of Literature, Science, and the Arts

May 2017