

## James Hanson

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### CONTACT INFORMATION

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### EMPLOYMENT

#### University of Maryland, College Park

Novikov Postdoctoral Fellow, Fall 2021 to present

I was offered a postdoctoral position at the ANR Project AGRUME for Spring 2021 working with Tomás Ibarlucía at the Université de Paris, but the pandemic prevented me from officially accepting the position. Instead, I worked remotely with Ibarlucía on a related research project.

### EDUCATION

#### University of Wisconsin–Madison

PhD in Mathematics, December 2020  
MA in Physics, December 2016

#### University of Minnesota, Twin Cities

BSc in Mathematics and Physics, May 2012

### PUBLICATIONS

1. J. HANSON, *Strongly Minimal Sets and Categoricity in Continuous Logic*. [arxiv.org/abs/2011.00610](https://arxiv.org/abs/2011.00610). Accepted at *Memoirs of the AMS*.
2. G. CONANT, K. GANNON, J. HANSON, *Keisler measures in the wild*. *Model Theory* 2, no. 1 (2023): 1-67. [doi.org/10.2140/mt.2023.2.1](https://doi.org/10.2140/mt.2023.2.1).
3. J. HANSON, T. IBARLUCÍA. *Approximate isomorphism of randomization pairs*. *Confluentes Mathematici*, Volume 14 (2022) no. 2, pp. 29-44. doi : 10.5802/cml.85.
4. J. HANSON, *Metric spaces are universal for bi-interpretation with metric structures*. *Ann. Pure Appl. Logic* (2023), [doi.org/10.1016/j.apal.2022.103204](https://doi.org/10.1016/j.apal.2022.103204).
5. G. CONANT, J. HANSON, *Separation for isometric group actions and hyperimaginary independence*. *Fundamenta Mathematicae* 259 (2022), 97-109, [doi.org/10.4064/fm167-2-2022](https://doi.org/10.4064/fm167-2-2022).
6. J. HANSON, *Analog reducibility*. *Journal of Logic and Computation*, 2021, exab036, [doi.org/10.1093/logcom/exab036](https://doi.org/10.1093/logcom/exab036).
7. W. COTTRELL, J. HANSON, A. HASHIMOTO, A. LOVERIDGE, AND D. PETTENGILL, *Intersecting  $D3$ - $D3'$  brane system at finite temperature*. *Phys. Rev. D*, 95, 044022 (2017).
8. W. COTTRELL, J. HANSON, AND A. HASHIMOTO, *Dynamics of  $\mathcal{N} = 4$  supersymmetric field theories in  $2 + 1$  dimensions and their gravity dual*. *J. High Energ. Phys.* 2016, 12.

### PUBLICATIONS (PREPRINTS)

1. G. CONANT, K. GANNON, J. HANSON, *Generic stability, randomizations, and NIP formulas*. [arxiv.org/abs/2308.01801](https://arxiv.org/abs/2308.01801).
2. J. HANSON, *A simple continuous theory*. [arxiv.org/abs/2306.14324](https://arxiv.org/abs/2306.14324). Submitted.
3. J. HANSON, *Bi-invariant types, reliably invariant types, and the comb tree property*. [arxiv.org/abs/2306.08239](https://arxiv.org/abs/2306.08239). Submitted.

4. J. HANSON, *Some semilattices of definable sets in continuous logic*. [arxiv.org/abs/2302.02264](https://arxiv.org/abs/2302.02264). Submitted.
5. J. HANSON, *A metric set theory with a universal set*. [arxiv.org/abs/2302.02258](https://arxiv.org/abs/2302.02258). Submitted.
6. J. HANSON, *Bounded ultramaginary independence and its total Morley sequences*. [arxiv.org/abs/2201.03631](https://arxiv.org/abs/2201.03631). Submitted.
7. J. HANSON, *Topometric characterization of type spaces in continuous logic*. [arxiv.org/abs/2106.13261](https://arxiv.org/abs/2106.13261). Submitted.
8. J. HANSON, *Approximate Isomorphism of Metric Structures*. [arxiv.org/abs/2011.00588](https://arxiv.org/abs/2011.00588). Submitted.
9. J. HANSON, *Approximate Categoricity in Continuous Logic*. [arxiv.org/abs/2011.00589](https://arxiv.org/abs/2011.00589). Submitted.

## TALKS

### *Generic stability and randomizations*

- Mid-Atlantic Mathematical Logic Seminar Spring Fling 2023. (May 2023)
- Joint Mathematics Meetings. (April 2022)

### *How bad could it be? The semilattice of definable sets in continuous logic*

- NYLogic Logic Workshop. (April 2023)
- Wesleyan Logic Colloquium. (November 2022)
- University of Maryland Logic Seminar. (October 2022)

### *Bounded ultramaginary independence*

- 2023 North American Annual Meeting of the ASL. (March 2023)
- UCLA Logic Colloquium. (May 2022)
- University of Maryland Logic Seminar. (February 2022)

### *An introduction to continuous logic*

- VCU Analysis, Logic and Physics Seminar. (April 2022)

### *Definable sets in continuous logic*

- University of Maryland Logic Seminar. (September 2021)

### *A gentle introduction to continuous logic*

- University of Maryland Logic Seminar. (September 2021)

### *A Versatile Counterexample for Invariant Types and Keisler Measures outside NIP*

- Notre Dame Model Theory Seminar (Digital). (March 2021)
- Séminaire de Logique Lyon-Paris (Digital). (March 2021)

Joint work with Gabriel Conant and Kyle Gannon.

### *Strongly Minimal Sets in Continuous Logic* (regarding essential continuity)

- Online Logic Seminar (Digital). (August 2021)

### *Definability and Categoricity in Continuous Logic*

- UW Logic Seminal (Digital), University of Wisconsin-Madison. (April 2020)

### *Skolemization in Continuous Logic*

- UW Logic Seminar, University of Wisconsin-Madison. (November 2019)

*Strongly Minimal Sets in Continuous Logic* (regarding categoricity)

- Logic Seminar, University of Illinois at Chicago. (October 2019)
- AMS Sectional Meeting, Special Session on Model Theory, University of Wisconsin-Madison. (September 2019)
- Graduate Student Conference in Logic XX, University of Illinois at Chicago. (April 2019)
- UCI Logic and Set Theory Seminar, University of California, Irvine. (April 2019)
- UW Logic Seminar, University of Wisconsin-Madison. (February 2019)

*Separable and inseparable Gromov-Hausdorff categoricity in continuous logic*

- Association for Symbolic Logic North American Annual Meeting, Western Illinois University. (May 2018)
- Graduate Student Conference in Logic XIX, University of Wisconsin-Madison. (April 2018)

*Encoding metric structures as metric spaces*

- UW Logic Seminar, University of Wisconsin-Madison. (February 2018)

#### AWARDS

University of Wisconsin-Madison, Department of Mathematics

- *Excellence in Mathematical Research Award*, October 2019.
- *Physical Sciences Award*, October 2018.

University of Wisconsin-Madison, Department of Physics

- *Van Vleck Fellowship for Teaching Assistants*, September 2012.
- *David L. Huber Fellowship*, September 2012.
- *Firminhac Fellowship*, September 2012.

University of Minnesota

- *Professor Hans H. Dalaker Scholarship for Undergraduate Mathematics*, April 2011.
- *Presidential Scholarship*, August 2008.
- *Maroon and Gold Leadership Award*, August 2008.
- *National Merit Scholarship*, August 2008.
- *Undergraduate Research Scholarship*, August 2008.

#### ORGANIZATIONAL EXPERIENCE

I run the University of Maryland, College Park, Logic Seminar and have done so since Fall 2021.

I helped organize the 19th Graduate Student Conference in Logic which was held at the University of Wisconsin-Madison in April 2018.

#### OUTREACH

I participated the University of Wisconsin-Madison Math Department Directed Reading Program.

I volunteered for the University of Wisconsin-Madison Math Circle.

I volunteer for the Skype a Scientist program.