

Howard Beck

hbeck@mpim-bonn.mpg.de

<https://www.mit.edu/~hbeck>

Cambridge, MA

EDUCATION

Northwestern University, Evanston, Illinois
Incoming Math PhD student, expected May 2030

Massachusetts Institute of Technology, Cambridge, MA
B.S. in Pure Mathematics
Humanities Concentration in Philosophy
GPA: 4.8/5.0
Relevant coursework: Graduate Topology Seminar (Kan Seminar), Algebraic Topology I and II, Motivic Homotopy Theory (at Harvard)

BASIS Tucson North, Tucson, AZ
High school diploma with High Honors
GPA: 3.99/4.0 (unweighted), 4.76/4.0 (weighted)

PREPRINTS

(In prep) *Chromatic Blueshift of \mathbb{E}_∞ -MU-algebras via Power Operations* with Kyle Roke

RESEARCH INTERESTS

Chromatic homotopy theory
Equivariant homotopy theory
Algebraic K-theory

TALKS

Selick on Odd p-torsion in $\pi_*(S^3)$ <i>MIT Kan Seminar</i>	May 9th, 2025
Adams on the J-homomorphism <i>MIT Kan Seminar</i>	March 31th, 2025
Chromatic Blueshift and Redshift in Stable Homotopy Theory <i>MIT/Harvard Zygotop Seminar</i>	March 5th, 2025
Borel on the mod 2 Cohomology of Homogeneous Spaces <i>MIT Kan Seminar</i>	February 7th, 2025
The Quillen-Lichtenbaum Conjectures <i>MIT Directed Reading Program Symposium, with Atticus Wang and Mohit Hulse</i>	January 31st, 2025
The Slice, Reduction, and Gap Theorems of HHR <i>MIT/Harvard Babytop Seminar</i>	December 3rd, 2024
Curve Shortening Flow <i>MIT Directed Reading Program Symposium, with Jackson Flowers</i>	February 3rd, 2023

POSITIONS

Visiting Student	June 23 - August 22, 2025
Max-Planck-Institut für Mathematik	Bonn, Germany

TEACHING EXPERIENCE

Multivariable Calculus (18.02)	Spring 2024
Undergraduate Assistant , Department of Mathematics, MIT Taught by Professor David Jerison	Cambridge, MA

- Hosted office hours, answered questions on the course site
- Helped with grading as needed
- Took lecture notes to post on Canvas for students

TEACHING (CONTINUED)	EXPERIENCE	Real Analysis (18.100A)	Spring 2023
		Mentor , Undergraduate Mathematics Association, MIT Cambridge, MA <ul style="list-style-type: none"> • Met weekly with a student to guide them through one of MIT’s real analysis classes • Helped with going through proofs, reviewing lecture material, and answering questions 	
		Playing Games with Infinity	Spring 2022
		Teacher , Educational Studies Program, MIT Through High School Studies Program Cambridge, MA <ul style="list-style-type: none"> • Taught high schoolers about ordinals and cardinals with Isabel McGuigan and Katherine Taylor 	
LEADERSHIP		Spinning Arts Executive Board	Summer 2022-present
		MIT fire spinning and flow arts club <ul style="list-style-type: none"> • Reserved spaces for performances and club practices • Helped run fire safety trainings • Staffed fire practices and ensured safety • Interfaced with school administration to organize our events 	
		Association of Student Activities Executive Board	Summer 2024-present
		Student body government overseeing clubs at MIT <ul style="list-style-type: none"> • Advocated for club needs • Allocated extra storage space for clubs • Helped clubs navigate event registration processes • Ran biggest club recruitment event of the year, with over 230 clubs 	
LANGUAGES		Human: English (native), Spanish (also native), French Computer: \LaTeX , Python, MATLAB, Java, JavaScript, Lua, HTML	