Curriculum Vitae (*2-page limit*)

Drummond Fielding
Center for Computational Astrophysics, Flatiron Institute, drummondfielding@gmail.com
Astronomy Department, University of California, Berkeley, dfielding@berkeley.edu

Professional Preparation

PhD, Astronomy, University of California, Berkeley, 2018
MS, Astronomy, University of California, Berkeley, 2014
BA, Physics & Mathematics, Johns Hopkins University, 2012

Appointments

Flatiron Fellow, Flatiron Institute, Center for Computational Astrophysics	starting Oct 2018
Graduate Student Researcher, University of California, Berkeley	2017–2018
Berkeley Fellow, University of California, Berkeley	2015–2017
NSF Graduate Research Fellow, University of California, Berkeley	2012–2015

Five Publications Most Relevant to This Proposal

1. "The impact of star formation feedback on the circumgalactic medium", Fielding, D., et al. *MNRAS*, **466**, 3810 (2017)
2. "How supernovae launch galactic winds", Fielding, D., et al. *MNRAS*, **470**, L39 (2017)
3. "Numerical Simulations of Powerful Galactic Winds Driven by Clustered Supernovae", Fielding, D. & Quataert, E. *MNRAS, in press*, (2018)
4. "Supernova feedback in a local vertically stratified medium: interstellar turbulence and galactic winds", Martizzi, D., Fielding, D., et al. *MNRAS*, **459**, 2311 (2016)
5. "Simulations of Jet Heating in Galaxy Clusters: Successes and Numerical Challenges", Martizzi, D., Quataert, E., Faucher-Giguere,C.A., Fielding, D. *MNRAS, in press*, (2018)

Research Interests and Expertise

Co-PI Fielding's research interests are focused on understanding how the interplay of galactic winds and small scale physical processes in circumgalactic medium regulate galaxy formation. To study this process Fielding has investigated how galactic winds are launched by the collective effect of numerous supernovae, and how these winds expand into, stir, and heat the circumgalactic medium. Fielding's work has consisted primarily of designing controlled numerical experiments to isolate specific physical processes and address well-posed questions. This work has given Fielding extensive experience using hydrodynamical simulations, and, in particular, implementing additional physical processes to couple to the hydrodynamics such as radiative cooling, thermal conduction, turbulent driving, and supernova explosions. As a graduate student Fielding served as Co-I on accepted NSF Extreme Science and Engineering Discovery Environment (XSEDE) computational proposals "Conduction, Convection, and Thermal Instability in Hot Halos" and "The Physics of Supernova Feedback: Global 3D Simulations of Galactic Disks" that were awarded a total of 3.6 million cpu hours.

Synergistic Activities

1. Consultant / commissioning time user for the Berkeley Research Computing High Performance Computing's Savio cluster
2. Public lecturer (e.g., presented on numerical astrophysics to the East Bay Astronomical Society, and taught astronomy course for 2nd and 3rd graders at North Oakland Community Charter School)
3. Referee for ApJ and MNRAS.

Collaborators (*past 5 years including name and current institution*)

Quataert, Eliot	University of California, Berkeley
Faucher-Giguere, Claude-Andre	Northwestern University

Martizzi, Davide	University of California, Santa Cruz
McKee, Christopher	University of California, Berkeley
Stern, Jonathan	Northwestern University
Sharma, Prateek	Indian Institute of Science
White, Christopher J.	University of California, Santa Barabara
McCourt, Michael	University of California, Santa Barabara
Klein, Richard	University of California, Berkeley
Thompson, Todd A.	The Ohio State University
Kim, Chang-Goo	Princeton University
Ostriker, Eve	Princeton University
Prochaska, J. Xavier	University of California, Santa Cruz
Oh, Peng	University of California, Santa Barabara
Stone, James	Princeton University
Lecoanet, Daniel	Princeton University