Matthias Raives

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RESEARCH OBJECTIVES

To study open problems in theoretical and computational astrophysics. I have particular interest in the supernova explosion mechanism and the winds of newly born, highly magnetic neutron stars.

EDUCATION

THE OHIO STATE UNIVERSITY | 2015 - Present | Columbus, OH
PhD in Astronomy | expected Graduation June 2021
MS in Astronomy | 2018

CALIFORNIA INSTITUTE OF TECHNOLOGY | 2011 - 2015 | Pasadena, CA
BS in Astrophysics

SELECTED PUBLICATIONS

Magnetized Rotating Isothermal Winds of Proto-Neutron Stars
Matthias J. Raives, Matthew S. B. Coleman, Todd A. Thompson | To Be Submitted 2020

The Antesonic Condition for the Explosion of Core-Collapse Supernovae II: Rotation and Turbulence
Matthias J. Raives, Todd A Thompson, Sean M. Couch | Submitted to MNRAS

The Antesonic Condition for the Explosion of Core-Collapse Supernovae I: Spherically Symmetric Polytropic Models: Stability & Wind Emergence
Matthias J. Raives, Sean M. Couch, Johnny P. Greco, Ondrej Pejcha, Todd A. Thompson | MNRAS | 2018

Accurate, Meshless Methods for Magnetohydrodynamics
Phillip F. Hopkins, Matthias J. Raives | MNRAS | 2016

RECENT TALKS

The Antesonic Condition: Understanding the Critical Explosion Criterion
Midwest Workshop on Supernovae and Transients | The Ohio State University | September 2019
The Antesonic Condition for Core-Collapse Supernovae
Midwest Workshop on Supernovae and Transients | University of Chicago | February 2019

TEACHING

Astronomy 1101
From Planets to the Cosmos | GE lab course | The Ohio State University | 2016-2018
Astronomy 1140
Planets & the Solar System | GE course | The Ohio State University | 2017
Astronomy 1141
Life in the Universe | GE course | The Ohio State University | 2017
Astronomy 1142
Black Holes | GE course | The Ohio State University | 2016

SKILLS

PROGRAMMING
Python • Mathematica • C/C++ • LaTeX • Bash