Fernando Hernán Rivas Aguilera
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EDUCATION

Doctor of Philosophy in Physics Aug 2015 - May 2023
University of Tennessee, Knoxville
Thesis: "Sub-Chandrasekhar type Ia supernovae scenarios with increased pathways for neutronization"

Bachelor of Science in Astronomy Jan 2006 - Dec 2012
University of Chile, Santiago, Chile

RESEARCH EXPERIENCE

Type Ia Supernova Modelling Aug 2017 - Dec 2022
Department of Physics and Astronomy, University of Tennessee at Knoxville, U.S.

- Studies of thermonuclear transients through large scale simulations
- Competencies: HPC-code development; OpenMP, MPI; batch and software dependency systems, performance measurement and modeling, large-scale data handling and analysis, three-dimensional data visualization
- Advisor: Bronson Messer (ORNL/UTK)

Millimeter Point Source Characterization Aug 2013 - Jul 2015
Department of Astronomy and Astrophysics, Pontifical Catholic University of Chile, Chile

- Source catalog construction using radio-telescope data in 3 observing bands
- Competencies: database management (SQL), measurement and fitting of time-domain data (Markov chain Monte Carlo).
- Advisor: Rolando Dünner (PUC Chile)

CO White Dwarf Modeling Mar-Aug 2011
National Astronomical Observatory, University of Chile, Chile

- Stellar evolution from Zero-Age Main Sequence using MESA (Modules for Experiments in Stellar Astrophysics) code.
- Competencies: FORTRAN.
- Advisor: Francisco Förster (UChile)

Galactic Metallicity Gradients Jan-Mar 2010
National Astronomical Observatory, University of Chile, Chile

- Spectral flux extraction from a set of HII-Regions in several galaxies (IRAF)
- Competencies: Data extraction and analysis, presenting results to a specialized audience.
- Advisor: Joseph Anderson (UChile)

TEACHING & OUTREACH

Astrophysics Seminar:
Supernovae Ia: Omens of the past. Today's Auguries
University of Tennessee, Knoxville. 2021

Astrophysics Seminar:
Type Ia supernovae progenitor systems: The double detonation mechanism
University of Tennessee, Knoxville. 2019

Poster presentation at the 4th Fifty-One Ergs workshop:
Sub-Chandrasekhar type Ia supernovae scenarios with large networks
North Carolina State University. 2019

Graduate teaching assistant for physics & astronomy
University of Tennessee, Knoxville, 2015-2017

Chaperone at CONICYT's (National Science and Technology Comission)
"News from the Universe" science exhibition
Santiago, Chile Oct - Nov 2009

SKILLS

Languages: English(fluent), Spanish(fluent), Python(proficient), LaTeX(familiar), FORTRAN(familiar)
Software: Jupyter, Git, SSH, Vim, Linux, Windows