

At the **Wolfgang Pauli Institute (WPI)** in Vienna a

PhD position (m/f/d)

in the field of **Computational Astrophysics**

has been opened for immediate appointment. The position is funded through the Austrian Science Fund FWF project “Numerical simulation of A-type and white dwarf stars”. The project will produce high resolution numerical simulation models on supercomputers to investigate the properties of turbulent convection and its interaction with pulsation in various types of stars for which high precision data from satellite missions and from ground based observations are available. The radiation hydrodynamical simulations should lead to a better insight into the physics of turbulent convection in stars and the role of turbulence in stellar mixing and overshooting and the role of turbulent pressure in the excitation and damping of stellar pulsation. The demands on computational resources required by such numerical simulations motivates the enhancement and further development of new methods of numerical time integration of the governing equations based on the concepts of operator splitting, adaptivity, and time steps guided by error control. Results from this mathematical work will be useful for research outside of astrophysics as well.

Candidates interested in this position should either have a master's degree in (applied) mathematics or computer sciences and strong interests in astrophysics, or a master's degree in physics or astrophysics with strong interests in numerical mathematics and scientific computing. Experience in numerical modelling and programming skills in either C/C++ or Fortran is expected. After evaluation of their application short-listed candidates will be interviewed via telephone. The candidate should be eligible for a doctoral study at the Faculty of Mathematics of the University of Vienna which is located in the same building as the Wolfgang Pauli Institute. Upon successful completion the candidate will be awarded the *doctoral degree in natural sciences (Dr. rer. nat.)* of the University of Vienna. In exceptional cases graduation at a different university may be possible. The maximum duration of the contract is for 3 years. This work is part of a highly international research done by the ACORE group at WPI and the University of Vienna.

Applications are preferably sent until 30 September 2020. Candidates must already be authorized to work in the EU and are invited to send a CV, a report on university credits, a proof of language skills (if not native speakers of English or German), a summary of research work, and name two scientists willing to write a recommendation letter for them.

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