



# Boost your research using HPC at the Center for Advanced Computing and Data Science

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## **Abstract**

High Performance Computing (HPC) is what powers cell phones, laptops, nuclear reactors' controls, stadiums' screens and lights and pretty much all other systems with complex electronic and analytic aims. The most competitive research also relies on HPC tools, hence it is very important to have some knowledge about HPC. As a demonstration of the enabling power of HPC, I will talk about some highlights in the area of computational astrophysics. I will demonstrate how HPC lets astrophysicist go deeper than ever in the study of the complex mathematics and physics that govern stellar explosions and accretion disk formation, which are some of the conditions of the early solar system. I will then move onto talking about the Center for Advanced Computing and Data Science (CACDS) of the University. CACDS provides HPC resources and services which advance Tier One research and education at UH for FREE. Some of the latest awarded grants and publications of UH have an important HPC component. CACDS strives to keep up with the latest HPC technologies, methods and applications. The Center has expert and friendly staff to help UH Faculty, Postdocs and graduate students by offering free consultations and training aimed at various levels of expertise, covering different aspects of HPC-all free of charge to the UH community. I will talk about the types of courses that we offer and how they are relevant for today's research and job markets. CACDS staff also provide computer code optimization consultation. I will provide some examples on these kind of services. Moreover, CACDS hosts different student programs, an HPC Certificate, seminars, and workshops all related to HPC and its applications.

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