



PHYSICS AND ASTRONOMY SEMINAR

Dr. Melissa Ness

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“Mapping the Milky Way's assembly with data-driven spectroscopy”

Abstract

I will introduce the data-driven approach to spectroscopy, The Cannon, which is a new method for deriving precise chemical compositions and stellar ages across the many stellar surveys that are mapping the Milky Way. With the Cannon, the abundances and stellar parameters from the multitude of stellar surveys can be placed directly on the same scale, using stars in common between the surveys. Furthermore, the information that resides in the data can be fully extracted; this has resulted in higher precision stellar parameters and chemical compositions being delivered from spectroscopic data and has opened up new avenues in galactic archeology, which I will present. I will showcase the role of data-driven spectroscopy in reconstructing the chemical enrichment history of the disk and its temporal evolution. Furthermore, I will discuss the prospects for chemical tagging as we enter the era where we have both the data and the tools to build the ultimate synthesis of Galactic information.

Tuesday, January 31, 2017
3:00 p.m.
Engineering Computer Science
Room 108