PHYSICS AND ASTRONOMY
SEMINAR

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Surveying the Galaxy with RR Lyrae Stars

Abstract

Due to their well-understood intrinsic brightness and distinct light curves, RR Lyrae stars are the best tracers of the Galactic stellar halo structure, substructure, and kinematics, and will remain so even in the upcoming age of the GAIA satellite mission. I will show how large and pure samples of RR Lyrae stars can be selected from datasets such as Pan-STARRS1 using machine-learning algorithms, and how these samples can be used to i) map the Galactic halo up to 120 kpc, ii) search for the faintest Milky Way satellites, and iii) precisely measure the 3D positions and kinematics of distant stellar streams. Through these studies I intend to illustrate the potential for breakthrough Galactic science that will be enabled by large astrophysical surveys coming online in the next five years.

Friday, February 19, 2016
2:30 p.m.
Engineering Computer Science Building
Room 104