



The Beginnings and Ends of Double White Dwarfs

Contribution ID: 13

Type: **Talk**

Constraining Galactic structure with the LISA white dwarf foreground

Tuesday, 2 July 2019 15:00 (20 minutes)

White dwarfs (WDs) comprise 95% of all stellar remnants and are thus a unique probe of the ancient structure of the Milky Way. Current and planned telescopes aren't able to directly probe the entire population due to its inherently low luminosity. However, the Galactic population of double WD binaries gives rise to a strong millihertz gravitational-wave foreground detectable by LISA. Here we show how characterizing this foreground will enable us to probe the Galactic structure in a novel way and measure the scale height of the Galaxy. We do this using a binary population synthesis study that incorporates age and metallicity-dependent Galactic spatial distributions of the double WDs.

Primary authors: Dr BREIVIK, Katelyn (CITA); Dr LARSON, Shane L. (CIERA - Northwestern University); Dr MINGARELLI, Chiara M. F. (Flatiron Institute)

Presenter: Dr BREIVIK, Katelyn (CITA)

Session Classification: Short-period Binaries & Gravitational Waves