Contribution ID: **51** Type: **poster**

The Accreted Neutron Star Crust is Polycrystalline

Wednesday, 23 May 2018 16:30 (1h 30m)

In the oceans of accreting neutron stars, hydrogen and helium burns to a produce a mixture of nuclei with a large range of atomic numbers. These mixtures continually freeze out to form new crust, however, recent work suggests that the crust cannot accommodate the entire mixture, and only a limited number of crust compositions can form. I will discuss recent work using molecular dynamics simulations and semianalytic models which suggest that the accreted crust is polycrystalline, formed of domains with distinct compositions. Future work may consider the size of these compositional domains and their impact on crust conductivities, crust heating, and burst phenomenlogy.

Primary author: Mr CAPLAN, Matthew (Indiana University)

Co-author: CUMMING, Andrew (McGill University)

Presenter: Mr CAPLAN, Matthew (Indiana University)

Session Classification: Poster Session