

PHAROS Conference 2020: The multi-messenger physics and astrophysics of neutron stars



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Building mountains on accreting neutron stars

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The spin frequencies of the neutron stars in low-mass X-ray binaries may be limited by the emission of gravitational waves, potentially making them an interesting target for continuous gravitational wave searches. The gravitational waves may be produced by an asymmetry in the star's mass distribution. Such “mountains” could be created by temperature asymmetries within the stellar crust. Little is currently known about the likely level of temperature asymmetry. We present our investigation of how internal magnetic fields might create such asymmetries, by making the thermal conductivity anisotropic.

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