Structure, Composition and Equation of State of Magnetar Inner Crusts

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Strong magnetic fields can significantly alter the properties of the outermost regions of a neutron star [1, 2]. We have extended our investigation of magnetar crusts to the inner region, where neutron-proton clusters coexist with a neutron liquid. The influence of the magnetic field on the composition and on the equation of state will be discussed. The calculations were made using a modified version of the semiclassical computer code developed by the Brussels-Montreal collaboration [3, 4], to account for the effects of Landau quantization of electron motion. Results obtained using the Brussels-Montreal Skyrme functional BSk24 [5] will be presented.

References

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