
Surprising pairing pairing properties around the drip line and in the crust of neutron stars

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Abstract

Based on a microscopic description of superfluidity in overflowing nuclear systems, it is shown that continuum coupling plays an important role in the suppression, the persistence and the reentrance of pairing. In such systems, the structure of the drip-line nucleus determines the suppression and the persistence of superfluidity. The reentrance of pairing with increasing temperature leads to additional critical temperatures between the normal and superfluid phases. Consequences for the crust of neutron stars will also be discussed.

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