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Self-bound clusters of one-dimensional fermionic mixtures

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Diffusion Monte Carlo calculations on the possibility of having self-bound one-dimen\-sional droplets of SU(6) $\times$ SU(2) ultracold fermionic mixtures are presented. We found that, even though arrangements with attractive interactions with only two spin types are not self-bound, mixtures with at least three kinds of fermions form stable small drops. However, that stabilization decreases for very tight confinements, where a universal behavior is found for Fermi-Fermi and Fermi-Boson clusters including attractive and repulsive interactions.

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