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Rupert L Frank and **Marius Lemm*** (mariuslemm@gmail.com), 80 Meritt Ln, Princeton, NJ 08540, and **Barry Simon**. *Condensation of fermion pairs in a domain*.

We consider a gas of fermions at zero temperature and low density, interacting via a microscopic two body potential which admits a bound state. The particles are confined to a domain with Dirichlet (i.e. zero) boundary conditions. Starting from the microscopic BCS theory, we derive an effective macroscopic Gross-Pitaevskii (GP) theory describing the condensate of fermion pairs. The GP theory also has Dirichlet boundary conditions.

Along the way, we prove that the GP energy, defined with Dirichlet boundary conditions on a bounded Lipschitz domain, is continuous under interior and exterior approximations of that domain. (Received September 19, 2017)