

Contribution Title: SHARP TRACE ASYMPTOTICS FOR A CLASS OF 2D  
MAGNETIC OPERATORS  
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Our work is motivated by a paper by H. Kunz in which he studied (among other things) the boundary correction for the grand-canonical pressure and density of a Fermi gas confined to a large  $2D$  box submitted to a constant magnetic field, and with Dirichlet boundary conditions.

Our main theorem is a sharp semiclassical trace estimate which provides a rigorous proof to the formulas announced by Kunz, and extends them to the case of Neumann boundary conditions. Moreover, the same theorem provides several other results on the integrated density of states for operators of the type  $(-i\hbar\nabla - \tilde{\mu}\mathbf{A})^2$  in  $L^2(\Omega)$  with Dirichlet and Neumann boundary conditions.