

Abstract Submitted
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**Phase Diagram and Thermodynamic Properties of Layered
Ferromagnet-Superconductor Nanostructures** PAUL H. BARSIC, ORIOL T.
VALLS, University of Minnesota — We present results obtained by exact, fully self-
consistent numerical solution of the microscopic Bogoliubov-DeGennes equations for
Superconductor/Ferromagnet (S/F) nanostructures in the clean limit. We discuss
the thermodynamics of SFS trilayers, including the complete phase diagram over
experimentally relevant parameter range. Both the first order 0 to π transition and
the second order transition to the normal state at T_c are included. We find excel-
lent agreement between theoretical and experimental results for T_c . Other relevant
quantities such as DOS, magnetization, and conductivity will also be discussed.

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