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**Tien-Tsan Shieh\*** (tshieh@indiana.edu), 2451 E. 10th St. Atp.804, Bloomington, IN 47408,  
and **Peter Sternberg** (sternber@indiana.edu), Bloomington, IN. *The onset problem for a thin  
superconducting loop in a large magnetic field.*

We present a rigorous analysis of the eigenvalue problem associated with the onset of superconductivity for a thin domain in the presence of a large magnetic field. We prove the validity of the formal result of Richardson and Rubinstein revealing that in this double limit of thin domain and large field the appropriate Rayleigh quotient differs from the standard one for order 1 applied fields through the addition of a potential depending on the field. (Received September 26, 2006)