

On spectral questions around the superconductivity between HC_2 and HC_3

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Superconductivity for Type II superconductors in external magnetic fields of magnitude between the second and third critical fields is known to be restricted to a narrow boundary region. The profile of the superconducting order parameter in the Ginzburg-Landau model is expected to be governed by an effective one-dimensional model. This is known to be the case for external magnetic fields sufficiently close to the third critical field. In this text we prove such a result on a larger interval of validity. This is based on a fine spectral analysis. This a joint work with Soeren Fournais and Mikael Persson.