

Abstract Submitted
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Low-energy muons and polarized neutrons for studying superconductivity¹ VLADIMIR KOZHEVNIKOV, Tulsa Community College, KRISTIAAN TEMST, Katholieke Universiteit Leuven, ANDREAS SUTER, Paul Scherrer Institute, TIMOTHY CHARLTON, Rutherford Appleton Laboratory, HELMUT FRITZSCHE, Chalk River Laboratories, THOMAS PROKSCHA, ELVEZIO MORENZONI, Paul Scherrer Intitut, MARGRIET VAN BAEL, CHRISTIAN VAN HAESSENDONCK, JOSEPH INDEKEU, Katholieke Universiteit Leuven — The penetration of the magnetic field into superconductors (SC) in the Meissner state is one of the major resources for studying SC. The merit of this resource will be greatly enhanced by quantitative measurements of the field distribution over the penetration layer, which, in particular, may lead to new insights for unconventional SC. We will report on measurements of the magnetic field profile in In and Sn using low-energy muons (LE-mSR) and polarized neutrons (PNR). The results solidly demonstrate nonexponential decay of the magnetic induction in accord with the Pippard and BCS theories. However, in contrast to In, results on which were reported last year, the data for Sn show significant differences in the values of the London penetration depth and the Pippard coherent length with those known from the literature.

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