

Abstract Submitted
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In- and out-of-plane London penetration depths in single crystals of $\text{FeSe}_{0.4}\text{Te}_{0.6}$ superconductor HYUNSOO KIM, Iowa State University/Ames Laboratory, MAKARIY TANATAR, Ames Laboratory, RYAN GORDON, Iowa State University/Ames Laboratory, CATALIN MARTIN, University of Florida, ZHIQIANG MAO, Tulane University, RUSLAN PROZOROV, Iowa State University/Ames Laboratory — In- and out-of-plane London penetration depths $\lambda(T)$ were measured in single crystals of $\text{FeSe}_{0.4}\text{Te}_{0.6}$ superconductor by means of the tunnel diode resonator technique. The penetration depth does not show BCS-like exponential saturation at low temperature. Instead, we found that both $\Delta\lambda_{ab}(T)$ and $\Delta\lambda_c(T)$ has nearly quadratic behavior, similar to that observed in the FeAs-based superconductors. We also calculated the in-plane superfluid density $\rho^s(T) = \lambda^2(0)/\lambda^2(T)$, and fitted with various possible models.

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