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Ko-shin Chen, Cyrill Muratov and Xiaodong Yan* (xiaodong.yan@uconn.edu), 341
Mansfield Road, Storrs, CT 06029. *Layer solutions for a one-dimensional nonlocal model of Ginzburg-Landau type.*

We study a nonlocal model of Ginzburg-Landau type that gives rise to an equation involving a mixture of the Laplacian and half-Laplacian. Our focus is on one-dimensional transition layer profiles that connect the two distinct homogeneous phases. We first introduce a renormalized one-dimensional energy that is free from a logarithmic divergence due to the failure of the Gagliardo norm to be finite on smooth profiles that asymptote to different limits at infinity. We then prove existence, uniqueness, monotonicity and regularity of minimizers in a suitable class. Lastly, we consider the singular limit in which the coefficient in front of the Laplacian vanishes and prove convergence of the obtained minimizer to the solutions of the fractional Allen-Cahn equation. (Received February 19, 2018)