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Enhancement of superconductivity by local inhomogeneities IVAR MARTIN, Los Alamos National Laboratory, DANIEL PODOLSKY, University of California, Berkeley, STEVEN KIVELSON, Stanford University — We study the effect of inhomogeneity of the pairing interaction or the background potential on the superconducting transition temperature, T_c. In the weak coupling BCS regime, we find that inhomogeneity, which is incommensurate with the Fermi surface nesting vectors, enhances T_c relative to its value for the uniform system. For a fixed modulation strength we find that the highest T_c is reached when the characteristic modulation length scale is of the order of the superconducting coherence length.

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