1032-35-87 **Minkyun Kim*** (`mkkim@math.purdue.edu`), Department of Mathematics, Purdue University, 150 N. University Street, West Lafayette, IN 47907-2067, and **Daniel Phillips** (`phillips@math.purdue.edu`), Department of Mathematics, Purdue University, 150 N. University Street, West Lafayette, IN 47907-2067. *Fourfold symmetric solution of the Ginzburg Landau equations for d-wave superconductors.*

We consider Ginzburg Landau equations involving two order parameters, ψ_s and ψ_d. There are two critical transition temperatures, T_s and T_d, for these materials.

We find locally unique fourfold solutions of the equations near the d-wave vortex core in the regime $T_s < T < T_d$ when $T \uparrow T_d$. Here T is the temperature. Also we study a relation between ψ_s and ψ_d. (Received August 14, 2007)