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From the BCS equations to the Anisotropic Superconductivity equations. JOSE SAMUEL MILLAN, Universidad Autonoma del Carmen, LUIS ANTONIO PEREZ, Instituto de Fisica, Universidad Nacional Autonoma de Mexico (UNAM), CHUMIN WANG, Instituto de Investigaciones en Materiales, UNAM — Since the discovery of cuprate superconductors, many new correlated electronic models have been proposed in order to understand their substantially different features, such as high transition temperature (Tc) at an optimal doping, quasi two-dimensional behavior, d-symmetry superconducting order parameter, less influence of the isotope effect, and a power-law behavior of the superconducting specific heat. Recently, we have studied a two-dimensional generalized Hubbard model, in which a second-neighbor correlated hopping is included in addition to the on-site and nearest-neighbor repulsions [1]. This model has the advantage to be able to give some insights on all these new features within the BCS formalism. In this work, we report a unified description of s-, p-, and d-wave superconductivities, in which the experimental power-law behavior of anisotropic superconducting specific heat can be nicely reproduced [2]. [1] J.S. Millán, L.A. Pérez, and C. Wang, Phys. Lett. A **335**, 505 (2005). [2] J.S. Millán, L.A. Pérez, and C. Wang, Proceedings of AIP **850**, 563 (2006).

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