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Simple Real-Space Picture for the Gap Functions in Iron Pnictide Superconductors TOSHIKAZE KARIYADO, MASAO OGATA, University of Tokyo and JST. TRIP — We propose a simple way to parameterize the gap function in iron pnictides. The key idea is to use orbital representation, not band representation, and to assume real-space short-range pairing. Our parameterization reproduces fairly well the structure of gap function obtained in microscopic calculation like random phase approximation (RPA). At the same time the present parameterization is simple enough to obtain an intuitive picture and to develop a phenomenological theory. We also discuss simplification of the treatment of the superconducting state. Furthermore, we calculate nuclear magnetic relaxation rate $1/T_1$ in superconducting phase using the introduced representation, and we discuss the experimentally observed variety of $1/T_1$ from the calculated results.

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