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Josephson effect with d+ip superconductors BRIGITTE LERIDON, CNRS/ESPCI, 10 rue Vauquelin, 75005 Paris, TAI-KAI NG, Physics Department, HKUST, Hong-Kong, C. M. VARMA, Department of Physics, University of Riverside, CA 92521 — Two different experiments, namely ARPES with circularly polarized photons and neutron diffraction have observed a time-reversal and inversion symmetry breaking in the pseudogap state of the cuprates. This phase had actually been predicted in the framework of a general model for the normal and superconducting state of high-Tc superconductors. This symmetry breaking should also affect the superconductive symmetry and lead to the admixture of a p-wave component to the dominant d-wave order parameter. We show here that this allows to make specific predictions for the Josephson effect between a "d+ip" superconductor and an ordinary s-wave superconductor, or between two "d+ip" superconductors, according to the orientation of the surface. We propose a set of experiments where, for some particular orientations, an anomalous Josephson effect should be observed whenever a pseudogap is present.

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