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Small Magnetic Fields Arrest the Josephson Plasma Resonance in $La_{2-x}Sr_xCuO_4$for x=1/8 ALEXANDER SCHAFGANS, ANDREW LAFORGE, Department of Physics, University of California San Diego, SASA DORDEVIC, Department of Physics, The University of Akron, SEIKI KOMIYA, YOICHI ANDO, Central Research Institute of Electric Power Industry, Tokyo, Japan, DIMITRI BASOV, Department of Physics, University of California San Diego — We report on a study of the far infrared interlayer response in a $La_{2-x}Sr_xCuO_4$ (La214) crystal at the x=1/8 doping. A magnetic field up to 8 Tesla, applied perpendicular to the CuO_2 planes, is found to completely suppress the Josephson plasma resonance (JPR) in sharp contrast to the mild suppression of the JPR if the field is applied along the planes. We suggest that this anomalous sensitivity of the JPR feature to modest fields for H|c-axis is due to the interaction of in-plane charge inhomogeneities with vortices that form in the CuO_2 planes.

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