

Abstract Submitted
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Time-Resolved ARPES Study of Ultrafast Dynamics in Cuprate Superconductor Bi2212¹ JIANQIAO MENG, Condensed Matter and Magnet Science, Materials Physics and Applications Division, Los Alamos National Laboratory, Los Alamos NM, 87545, USA, GEORGI L. DAKOVSKI, SLAC National Accelerator Laboratory, Menlo Park, CA 94025-7015, USA, JIAN-XIN ZHU, Physics of Condensed Matter and Complex Systems, Theoretical Division, Los Alamos National Laboratory, Los Alamos NM, 87545, USA, PETER S. RISEBOROUGH, Department of Physics, Temple University - Philadelphia, PA 19122, USA, GENDAGU, Condensed Matter Physics & Materials Science, Brookhaven National Laboratory, Upton, NY 11973, USA, STEVE M. GILBERTSON, GEORGE RODRIGUEZ, Center for Integrated Nanotechnologies, Materials Physics and Applications Division, Los Alamos National Laboratory, Los Alamos NM, 87545, USA, TOMASZ DURAKIEWICZ, Condensed Matter and Magnet Science, Materials Physics and Applications Division, Los Alamos National Laboratory, Los Alamos NM, 87545, USA — The momentum-dependent ultrafast dynamics in cuprate superconductor Bi2Sr2CaCu2O8 is investigated using ultra high resolution time-resolved angle-resolved photoemission spectroscopy (tr-ARPES). In this talk, we will present our observation and analysis of dynamics of the quasiparticle states in Bi2Sr2CaCu2O8 in nodal and antinodal direction as a function of doping. Work was performed with temporal resolution of 35fs. The consequences of our findings in terms of nodal-antinodal dichotomy will be discussed.

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