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Size, shape and carrier type of multiple Fermi surface pockets in YBCO from two-axis angular quantum oscillation measurements SUCHITRA E. SEBASTIAN, G.G. LONZARICH, University of Cambridge, N. HARRISON, M.M. ALTARAWNEH, C.H. MIELKE, NHMFL, Los Alamos, P. GODDARD, University of Oxford, RUIXING LIANG, D.A. BONN, W.N. HARDY, University of British Columbia — The Fermi surface topology of $YBa_2Cu_3O_{6+x}$ is mapped by means of two-axis angular-dependent quantum oscillation measurements on high quality detwinned single crystals. Multiple Fermi surface pockets are probed by means of in-plane and out-of-plane rotation studies, the characteristics of which enable us to identify the carrier type, shape and location of the individual sections. We further use the temperature dependence of the quantum oscillation amplitude measured over an extended temperature range to discern the statistical distribution of constituent quasiparticles.

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