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Three-dimensional Fermi surface in $Cu_xBi_2Se_3$ GANG LI, TOMOYA ASABA, FAN YU, BENJAMIN LAWSON, ZIJI XIANG, COLIN TINSMAN, ADAM BERKLEY, Physics Dept., Univ. of Michigan, YEW SAN HOR, Physis Dept., Missouri S&T, LU LI, Physics Dept., Univ. of Michigan — To study the evolution of bulk electronic structure by copper doping in Bi_2Se_3, highly sensitive torque magnetometry measurements are carried out on a series of single crystals of different doping levels. By employing magnetic field up to 31 Tesla, we are able to observe de Hass-van Alphen oscillations from Field perpendicular to the basal plain (H$\|$c) up to the parallel configuration (H$\perp$c), and confirm the three-dimensional nature of the Fermi surface in the doped compounds. The quantum oscillation frequency varies and the Cu concentration changes. The anisotropy of the effective mass and the Fermi velocity will be also discussed.

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