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The Fermi Surface of Highly Doped Bi_2Se_3 and the Implications for Superconductivity in $CuBi_2Se_3$ ELIAS LAHOUD, AMIT KANIGEL, MUNTASER NAAMNEH, AMIT RIBAK, HANAN CHASKA, Technion - Israel Institute of Technology, MICHAL PETRUSHEVSKY, ERAN MANIV, YORAM DAGAN, Tel-Aviv University, KANIGEL GROUP TEAM, DAGAN GROUP TEAM — The 3D Fermi-surface (FS) mapping of Bi_2Se_3 for different samples with carrier-density ranging from 10^{17} to 10^{20} cm^{-3} was made using Angle Resolved Photoemission Spectroscopy. While in the low carrier density samples a closed FS was observed, in high carrier density superconducting $Cu_xBi_2Se_3$ samples the FS was found to be open. The open FS puts constraints on the possible order-parameters in this system.

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