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Spin resolved photoemission on surface doped topological insulator $\mathrm{Bi_2Se_3}^1$ ZHIHUI PAN, ELIO VESCOVO, Brookhaven National Laboratory, ALEXEI FEDOROV, Lawrence Berkeley National Laboratory, D. GARDNER, S. CHU, YOUNG S. LEE, Massachusetts Institute of Technology, GENDA GU, TONICA VALLA, Brookhaven National Laboratory — Topological insulators (TL) have attracted much attention because of their exotic properties. $\mathrm{Bi_2Se_3}$ is a model TL with a relative large bulk gap and a simple surface state structure. By depositing various impurities on the surface, we were able to fill the topological surface state and higher lying Rashba splitting surface states. The spin texture of the surface electronic structure was determined in spin resolved photoemission measurement.

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