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**Observation of the $B_s^0 \to K^-\pi^+$, $\Lambda_b^0 \to p\pi^-$ and $\Lambda_b^0 \to pK^-$ Modes at CDF** GUIDO VOLPI, University of Pisa, CDF COLLABORATION — We report the first observation of the charmless decays modes $B_s^0 \to K^-\pi^+$, $\Lambda_b^0 \to p\pi^-$, $\Lambda_b^0 \to pK^-$ using 1 fb$^{-1}$ of CDF data. All three modes are expected to exhibit significant direct-$CP$ asymmetries, of which we present preliminary measurements. The new modes are separated from other larger-yield two-prong charmless modes by means of a global kinematic-PID fit, including a detailed model of QED radiation effects and non-Gaussian resolution tails.

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