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BaBar Searches for Rare Radiative Penguin Decays of B Mesons
REMIGIUS MOMMSEN, University of California, Irvine, BABAR COLLABORATION — We present searches for rare radiative penguin decays of the B meson: $B \to \rho\gamma$, $B \to \gamma\gamma$, and $B \to D^*\gamma$. Candidate events are identified from exclusively reconstructed combinations of D^*, ρ, and photon candidates. $B \to \rho\gamma$ is sensitive to the CKM-suppressed $b \to d\gamma$ quark decay process, the rate of which is directly dependent upon the CKM matrix element $|V_{td}|$. $B \to \gamma\gamma$ and $B \to D^*\gamma$ proceed through weak interaction of the constituent quarks of the B meson and could receive enhancement of the decay rate from new physics at the electroweak scale. The data samples studied comprise up to 230 million $\Upsilon(4S) \to B\overline{B}$ decays collected with the BaBar detector at the PEP-II e^+e^- storage ring.

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