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## Measurement of the distribution of $\varphi^*$ in events containing dimuon pairs with masses between 30 and 500 GeV in $10.4 \text{ fb}^{-1}$ of proton-antiproton collisions

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The variable  $\varphi^*$  probes the same physical effects as the  $Z/\gamma^*$  boson transverse momentum, but is less susceptible to the effects of experimental resolution and efficiency. Using  $10.4 \text{ fb}^{-1}$  of proton-antiproton collisions collected by the D0 detector at the Fermilab Tevatron, we measure the distribution of the variable  $\varphi^*$  in events containing dimuon pairs with masses between 30 and 500 GeV. The data are corrected for detector effects and presented in bins of dimuon rapidity and mass.

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