

Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Comparisons of Exact Results for the Virtual Photon Contribution to Single Hard Bremsstrahlung in Radiative Return for Electron-Positron Annihilation¹ SCOTT YOST, B.F.L. WARD, Baylor University, STANISLAW JADACH, CERN Theory Division. Cracow Institute of Nuclear Physics — We compare fully differential exact results for the virtual photon correction to single hard photon bremsstrahlung obtained using independent calculations, both for e^+e^- annihilation at high-energy colliders and for radiative return applications. The results are compared using Monte Carlo evaluations of the matrix elements as well as by direct analytical evaluation of certain critical limits. Special attention is given to the issues of numerical stability and the treatment of finite-mass corrections. It is found that agreement on the order of 10^{-5} or better is obtained over most of the range of hard photon energies, at CMS energies relevant to both high energy collisions and radiative return experiments.

¹Work partly supported by Department of Energy grant DE-FG02-05ER41399 and NATO grant PST.CLG.980342.

Scott Yost
Baylor University

Date submitted: 14 Jan 2006

Electronic form version 1.4