

Abstract Submitted  
for the TSF15 Meeting of  
The American Physical Society

**Extrapolation Technique Pitfalls in Asymmetry Measurements at Colliders** KATRINA COLLETTI, DAVID TOBACK, JON WILSON, ZIQING HONG, Texas AM University — Asymmetry measurements are common in collider experiments and can sensitively probe particle properties. Typically, data can only be measured in a finite region covered by the detector, so an extrapolation from the visible asymmetry to the inclusive asymmetry is necessary. Often a constant multiplicative factor is more than adequate for the extrapolation and this factor can be readily determined using simulation methods. However, there is a potential, avoidable pitfall involved in the determination of this factor when the asymmetry in the simulated data sample is small. We find that, to obtain a reliable estimate of the extrapolation factor, the number of simulated events required rises as the inverse square of the simulated asymmetry, which can mean that an unexpectedly large sample size is required when determining its value.

Katrina Colletti  
Texas A  
M University

Date submitted: 07 Oct 2015

Electronic form version 1.4