



NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Seminar in Theoretical Physics

Computational Challenges for Multi-Particle Processes at Colliders

Presented by:

Dr. Andreas van Hameren

**The H. Niewodniczanski Institute of Nuclear Physics
Krakow, Poland**

**Friday June 25 at 11:00 AM
Namm 805 (Conference Room in Dean's Office)**

Abstract

Physics at high energy hadron colliders like Tevatron at Fermilab and LHC at CERN requires the precise description of scattering processes with many particles in the final state. This involves already many final-state particles at the so-called hard process, demanding the calculation of matrix elements for these. On top of that, the leading order in the perturbative expansion often does not deliver the required precision, demanding calculations to be performed at the next-to-leading order, increasing their complexity considerably.