

# Precision Predictions for Polarized Electroweak Bosons

*Friday 19 July 2024 20:45 (15 minutes)*

The Higgs boson discovery at the Large Hadron Collider (LHC) completed the Standard Model of Particle Physics, and it confirmed the Higgs mechanism as a suitable description of the Electroweak-Symmetry-Breaking (EWSB). Nevertheless, the dynamics of the EWSB is still one of the most consequential questions in particle physics and a fascinating topic due to its connection to other open questions about the structure of the early universe, matter-anti-matter asymmetry and fermionic mass hierarchies. A pathway to study the EWSB mechanism is to investigate the longitudinal polarisation state of massive electroweak bosons. In this presentation I will discuss the computation and phenomenology of higher order QCD effects to polarised boson production cross-sections at the LHC and their impact on the extraction of the longitudinal polarisation fractions.

## Alternate track

### I read the instructions above

Yes

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**Track Classification:** 04. Top Quark and Electroweak Physics