

Abstract Submitted
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S/particle Pole Masses at Two Loops DAVID ROBERTSON, Otterbein College — Upcoming experiments at the LHC (and a possible future linear collider) will require theoretical calculations at two-loop, and even higher, levels in quantum field theory. As an example, supersymmetry (SUSY) predicts the existence of many new particles with perturbative interactions. The most important observables in softly broken SUSY are just the new particle masses. Comparisons of particular models of SUSY breaking with experiment will thus require systematic methods for two-loop computation of physical pole masses in terms of the underlying Lagrangian parameters. I describe techniques for performing such calculations, based on Tarasov's recurrence relation algorithm and a set of software tools (TSIL) for computing the resulting dimensionally regularized self-energy integrals.

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