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Computer Algebra for Precision Calculations in Particle Physics: the FORM project

Precision calculations in particle physics rely on computer algebra tools to manipulate and process the large-scale algebraic expressions that result from applying perturbation theory in the Standard Model. Commercial computer algebra packages are often insufficient to handle state-of-the-art problems. The FORM computer algebra system is a community-based effort overcoming these restrictions, which has been developed continuously and has enabled the vast majority of precision calculations up to now. This document discusses the current status and future objectives of computer algebra for particle physics, and outlines the needs required to accomplish them.

Authors: VON MANTEUFFEL, Andreas (University of Regensburg); GLOVER, EDWARD,WILLIAM,NIGEL; LAENEN, Eric (Nikhef National institute for subatomic physics (NL)); HERZOG, Franz (CERN); HEINRICH, Gudrun (KIT); VERMASEREN, Jos; DAVIES, Joshua (University of Liverpool); TANCREDI, Lorenzo (Technische Universitat Munchen (DE)); STEINHAUSER, Matthias; MOCH, Sven-Olaf (Hamburg University (DE)); Dr UEDA, Takahiro (Juntendo University); GEHRMANN, Thomas Kurt (University of Zurich (CH))