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Manuel Kauers* (manuel@kauers.de). *Computer Algebra for Special Function Inequalities.*

Computer algebra has, in the past few decades, grown to a valuable tool for answering questions about special functions. We are now in a position that many different kinds of identities can be proven and even discovered automatically, with little to no human assistance. In contrast to identities, inequalities for special functions have long been considered inaccessible to symbolic computation. But they are not. In the talk we will present a recent computer procedure that facilitates the work with special function inequalities. This procedure might fail to arrive at a decision (true or false) for a particular inequality at hand, returning the answer "I-don't-know". In this situation, the human may assist the computer by appropriately reformulating the inequality. Which reformulations are appropriate for the proving procedure is, however, not at all clear a priori and has to be investigated via experimenting. We will show some examples of nontrivial inequalities which we were able to prove in this way. (Received August 25, 2006)