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Nicolas Allen Smoot* (nsmoot@risc.uni-linz.ac.at) and **Cristian-Silviu Radu**. *Verifying Partition Congruences with Symbolic Computation*. Preliminary report.

A key problem in studying a conjectured infinite family of partition congruences is the difficulty of checking all but the smallest individual cases. Generally, such families necessitate the examination of exponentially large integers, which are input into arithmetic functions that already exhibit subexponential growth. Recent computational tools developed at the Research Institute for Symbolic Computation permit a substantial amount of evidence to be collected for a conjectured infinite family of congruences by more efficiently examining a large number of individual cases. These tools also have utility in constructing some of the functions necessary for a complete proof, particularly when the associated modular curve has genus 1. We will present these results and demonstrate their usefulness for checking future families of congruences. (Received September 13, 2019)