1052-11-202 **Peter Paule***, Research Institute for Symbolic Computation, (RISC), Johannes Kepler University Linz, A-4040 Linz, Austria, and **Silviu Radu**. *Partition Analysis and Partition Congruences.*

The talk is a continuation of a project report delivered at the AMS Spring 2009 Sectional Meeting at Raleigh (April 4-5). It begins with partition explorations made possible by Omega, the computer algebra implementation of MacMahon's Partition Analysis developed jointly with G.E. Andrews and A. Riese. Special focus will be put on directed graphs made up of chains of generalized hexagons. From generating functions of such objects one can build infinite families of modular forms giving rise to partition congruences conjectured by G.E. Andrews and the speaker. Proofs have been delivered by M.D. Hirschhorn and J.A. Sellers, and by S.H. Chan. The talk reports on recent joint work with S. Radu who with the help of computer algebra was able to discover and prove additional congruence relations. (Received August 28, 2009)