1033-17-41 **David G Taylor*** (taylor@roanoke.edu), Department of Mathematics, CS, and Physics, Roanoke College, 221 College Lane, Salem, VA 24153. *The Bloch-Okounkov correlation functions and dimension formulas for modules of infinite-dimensional Lie algebras.*

Bloch and Okounkov introduced an n-point correlation function on the infinite wedge space and found an elegant closed formula in terms of theta functions. This function has connections to Gromov-Witten theory, Hilbert schemes, symmetric groups, etc, and it can also be interpreted as correlation functions on integrable a_∞-modules of level one. Together with Shun-Jen Cheng and Weiqiang Wang, we have studied the computation of the correlation functions for other levels and the infinite-dimensional Lie algebra b_∞, c_∞, and d_∞. In this talk, I will present the status of this problem and discuss some limitations of our approach and recent developments. (Received August 21, 2007)