KALEB D. RUSCITTI, McGill University
The Verlinde formula for flat SU(2) connections using a toric degeneration

The moduli space M of flat SU(2) connections has a prequantum line bundle L and a polarization, the data required for geometric quantization. Jeffrey and Weitsman have shown the moduli space M of flat SU(2) connections has Hamiltonian functions which almost exhibit M as a toric variety. If it were toric, the theory of toric varieties tells us that the space of global sections of L, which is the quantum data, has dimension computed by the Verlinde formula. Hurtubise and Jeffrey have constructed a "master space" P with both a symplectic and a holomorphic description, which is toric and should contain all the information of M. Holomorphically, P is a space of framed parabolic sheaves over a punctured Riemann surface, and by degenerating the original Riemann surface to the punctured one, the moduli space M degenerates to the master space P. The aim now is to see how the recent work of Harada, Kaveh and Khovansky makes rigorous the justification of the Verlinde formula obtained by point counting by Jeffrey and Weitsman, hence giving a new proof of the formula.