Algebra
Seminar

A Borcherds-Kac-Moody Superalgebra with Conway symmetry

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Abstract: We construct a Borcherds-Kac-Moody superalgebra on which the Conway group Co_0 acts faithfully. We show that this algebra is generated by vertex operators, or "BRST-closed" states, in a chiral superstring theory. This parallels the construction of the Monster Lie algebra by Borcherds. We use this construction to produce denominator identities for the partition functions/McKay Thompson series of the vertex operator algebra known as the Conway module $V^{\natural}$, described by Frenkel-Lepowsky-Meurman and Duncan. This work is in collaboration with S. Harrison and R. Volpato. If time permits, we explain how this construction may be promoted to a full (non-chiral) string theory compactification, following related work on Monstrous moonshine and string theory in collaboration with D. Persson and R. Volpato.

Tuesday, November 27, 2018, 4:00 pm
Mathematics and Science Center: W301

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