

Borcherds Algebras and 2d String Theory

Friday, 4 June 2021 21:00 (1h 15m)

Borcherds Kac-Moody (BKM) algebras are a generalization of familiar Kac-Moody algebras with imaginary simple roots. On the one hand, they were invented by Borcherds in his proof of the monstrous moonshine conjectures and have many interesting connections to new moonshines, number theory and the theory of automorphic forms. On the other hand, there is an old conjecture of Harvey and Moore that BPS states in string theory form an algebra that is in some cases a BKM algebra and which is based on certain signatures of BKMs observed in 4d threshold corrections and black hole physics. I will talk about the construction of new BKMs superalgebras arising from self-dual vertex operator algebras of central charge 12, and comment on their relation to physical string theories in 2 dimensions. Based on work with N. Paquette, D. Persson, and R. Volpato.

Presenter: HARRISON, Sarah (McGill U.)