1172-20-358 **Siu-Hung Ng*** (rng@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *Orbifolds and minimal modular extensions.*

In this talk, we will discuss how minimal modular extensions can be obtained from the orbifolds of vertex operator algebras. Given a finite group G and a *nice* vertex operator algebra V with G acting faithfully as automorphisms, one can naturally construct a Tannakian category $\mathcal{E}_{V^G}$ braided equivalent to $\mathcal{E} = Rep(G)$ and a braided $\mathcal{E}$-category $\mathcal{F}_{V^G}$. The module category $\mathcal{C}_{V^G}$ of the vertex operator subalgebra V^G of V fixed by G is a minimal modular extension of $\mathcal{F}_{V^G}$. In addition, if V is holomorphic, $\mathcal{C}_{V^G}$ is a minimal modular extension of $\mathcal{E}$, and hence braided equivalent to $\mathcal{Z}(\mathrm{Vec}_G^{\omega})$ for some 3-cocycle ω of G by a result of Lan-Kong-Wen. In particular, this proves the conjecture on holomorphic orbifolds by Dijkgraaf-Pasquier-Roche. The talk is based on a joint work with C. Dong and L. Ren. (Received September 01, 2021)