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## Analytic problems arising in two-dimensional conformal field theory

Vertex operator algebras and conformal nets are two different axiomatizations of the same physical idea: a 2d chiral conformal field theory. While the formalism should be essentially equivalent, in practice facts which are known in one setting are open in the other. I'll discuss open questions in subfactor theory which arise from conformal nets, and describe recent work to address some of these questions using vertex operator algebras. Particular attention will be paid to an approximation problem in complex function theory.