

Théorie conforme des champs et systèmes quantiques à plusieurs corps  
21 août – 9 septembre 2022

Conformal field theory and quantum many-body physics  
August 21 – September 9, 2022

**Shai Chester**  
(Weizmann Institute of Science)

## **Bootstrapping the upper critical dimension of the 3-state Potts model**

---

We consider the 3-state Potts model in  $d \geq 2$  dimensions. For  $d$  less than the upper critical dimension  $d_{\text{crit}}$ , the model has a critical and a tricritical fixed point. In  $d=2$ , these fixed points are described by minimal models, and so are exactly solvable. For  $d > 2$ , however, strong coupling makes them difficult to study and there is no consensus on the value of  $d_{\text{crit}}$ . We use the numerical conformal bootstrap to compute critical exponents of both the critical and tricritical fixed points for general  $d$ . In  $d=2$  our results match the expected values, and as we increase  $d$  we find that the critical exponents of each fixed point get closer until they merge at  $d_{\text{crit}} \sim 2.5$ .