

Craig Lawrie. The $a=c$ Laboratory

Tuesday, 10 September 2024 14:30 (1 hour)

4d CFTs with identical central charges have a variety of novel physical properties, even when there is not enhanced $N=3$ or $N=4$ supersymmetry. I introduce a construction of $N=1$ and $N=2$ SCFTs with $a=c$ (from Argyres–Douglas building blocks). I point out interesting features such as the behavior of the Schur index, and the lessons that we can learn about the Higgs branch Hilbert series and Hall–Littlewood index of generic class S theories. Next, I will discuss dualities between these non-Lagrangian $a=c$ theories and Lagrangian theories, including where there is supersymmetry enhancement. Finally, I comment on the existence of a mixed-anomaly between one-form and axial symmetries in these $a=c$ theories, and how that can constrain the infrared behavior of such theories after superpotential deformation.