Contribution ID: 22

## **Extremal Three-point Correlators in Kerr/CFT**

We compute three-point correlation functions in the near-extremal, near-horizon region of a Kerr black hole, and compare to the corresponding finite-temperature conformal field theory correlators. For simplicity, we focus on scalar fields dual to operators  $calO_h$  whose conformal dimensions obey  $h_3 = h_1 + h_2$ , which we name \emph{extremal} in analogy with the classic  $AdS_5 \times S^5$  three-point function in the literature. For such extremal correlators we find perfect agreement with the conformal field theory side, provided that the coupling of the cubic interaction contains a vanishing prefactor  $\propto h_3 - h_1 - h_2$ . In fact, the bulk three-point function integral for such extremal correlators diverges as  $1/(h_3 - h_1 - h_2)$ . This behavior is analogous to what was found in the context of extremal AdS/CFT three-point correlators. As in AdS/CFT our correlation function can nevertheless be computed via analytic continuation from the non-extremal case.

**Primary authors:** Prof. BECKER, Melanie (Texas A&M University); Dr CREMONINI, Sera (Texas A&M University and DAMPT, University of Cambridge); Dr SCHULGIN, Waldemar (Texas A&M University)

Presenter: Dr SCHULGIN, Waldemar (Texas A&M University)