On a class of conformal covariant operators and conformal invariants

Abstract:
In 2005, Graham-Zworski introduced a continuous family of conformal covariant operators of high orders via scattering theory on conformal compact Einstein manifolds. This class of operator $P_γ$ and their associated curvature $Q_γ$ has played important roles in problems in conformal geometry and in the study of some geometric invariants in the Ads/CFT setting. In the talk, I will survey some of the recent progress in this field, and also report some recent joint work with Jeffrey Case regarding positivity property of this class of operators under curvature assumptions.