

Weyl vs Conformal vs Virasoro

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In $d=2$ quantum field theories, global conformal invariance does not necessarily mean Virasoro invariance or Weyl invariance. I indeed show that almost all the globally conformal invariant differential equations in two dimensions are neither Virasoro invariant nor Weyl invariant. The only exceptions are the higher spin conservation laws, conformal Killing tensor equations and the Laplace equation of a conformal scalar. In relation to my work, with this opportunity, I'll make a comment (and clarification) on the work by Penedones and Yamazaki (in $d=2$).