Conformal group actions and their influence on the causal boundary

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ABSTRACT

On this talk we will consider the problem of the computation of the c-completion of an spacetime V where we have a conformal group G acting freely *and* properly discontinuously on it*.*
Under such conditions, the quotient space $M = V/G$ is again a Lorentz manifold with the induced metric, and then, we can define a principal covering projection $\pi : V \to M$ between both Lorentz manifolds. We will show that, under some mild conditions, previous projection extends to the corresponding completions at the point set, the chronological and the topological level. Concretely, we will give sufficient conditions to ensure that $\overline{V}/G$ and $\overline{M}$ are both, homeomorphic and chronologically isomorphic, being $\overline{V}$ and $\overline{M}$ the c-completions of V and M respectively. Finally, we will present some examples proving the applicability and optimality of our results.