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## Is action complexity better for $dS$ space in JT gravity?

Holographic complexity is supposed to capture the evolution of spacetime. In two-dimensional de Sitter ( $dS$ ), volume complexity remains  $O(1)$  up to a critical time, after which it suddenly diverges. On the other hand, in  $(d>2)$ -dimensional  $dS$ , complexity becomes very large even before the critical time. In Jackiw-Teitelboim (JT) gravity, taking into account the dilaton, the same behavior is expected for complexity in two-dimensional  $dS$ . We show that this expectation is met by action complexity, which we explicitly compute by performing half reduction from three-dimensional  $dS$ . In addition, we propose an appropriate Weyl field-redefinition such that volume avoids the discontinuous jump in time evolution. Since action complexity directly takes into account the dilaton and does not suffer the Weyl-field redefinition ambiguity which affects volume complexity, we argue that action is better than volume for  $dS$  in JT gravity.

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