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Inflation in Scalar-Coupled BF gravity

Monday 27 October 2025 14:00 (15 minutes)

We demonstrate how extended gravity theories can be derived from the ʙeformation of topological BF field theory. Initially, BF gravity can be deformed by the disformal modification of theory's internal fields. This transformation leads to the appearance of a scalar-tensor gravity action. Thus, one generates the theory that includes the inflaton field, as opposed to earlier models (e.g. emergent gravity a la Wilczek). Consequently, the proposed approach reproduces scalar-tensor gravity as it could occur at the pre-inflationary stage of the Universe.

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