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## Chern-Simons interaction with a non-canonical axion: paving the way for polarized tensor modes from inflation

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The Chern-Simons coupling between an axion-like field and a  $U(1)$  gauge field is a well-known mechanism for generating chiral gravitational waves (GWs) during inflation. However, its observational signature, e.g., in the Cosmic Microwave Background (CMB), is challenged by stringent constraints on primordial curvature perturbations, which are also sourced by this interaction.

We explore a novel extension of this mechanism in which the axion has a non-canonical kinetic term. In this talk, I will demonstrate that a reduced sound speed significantly suppresses the sourced scalar perturbations while keeping the chiral tensor modes amplified. Remarkably, this allows the sourced tensor modes to dominate over the vacuum contribution while evading CMB constraints on scalar modes, opening the possibility of a polarized primordial GW background at CMB scales.

I will also discuss the backreaction of the sourced gauge field on the homogeneous axion background, which could be relevant for the GW background at smaller scales.

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