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Testing GUT phase transition via inflated gravitational waves

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GUT phase transition is generally considered as an unobservable process due to its ultra-high energy scale, and the monopole problem associated with GUT phase transition is one motivation of inflation. We propose that if a first-order GUT phase transition happens during inflation, the induced gravitational waves (GWs) are redshifted and deformed, and might be observed today in GW observatories. We show that the e-folding number at 15 or 25 can shift the GWs to 10 Hz or mHz hands, respectively, which might be tested in the future ground-based or space-based interferometers. Presentation based on https://arxiv.org/abs/2501.01491

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