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Generalised Galileon Duality

Monday 1 September 2025 15:00 (50 minutes)

There exists a duality in the form of a non-local field redefinition that maps two different Galileon theories into each other while preserving scattering amplitudes. This duality arises naturally in the context of massive gravity and bigravity theories where the Galileon emerges in the decoupling limit as the helicity zero mode of the massive graviton, with the duality being the decoupling limit remnant of diffeomorphism invariance. Remarkably, the duality extends to any scalar field theory and nontrivially maps the class of theories that have second order equations of motion into each other. I will discuss how to couple such scalar theories to gravity (massless and massive) in a way that preserves the duality properties.

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