

# Partial masslessness beyond de Sitter

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It is known that the de Sitter group admits so called short representations for massive spin-2 fields when the mass and cosmological constant saturate the Higuchi bound. In the linear theory of a massive spin-2 field propagating on Einstein spacetimes this is manifested via the emergence of a new linear gauge symmetry when the Higuchi bound is saturated. As a result of this gauge symmetry the helicity-0 mode of the massive spin-2 decouples and the theory only propagates 4 helicity modes, a phenomenon which is known as partial masslessness. A long outstanding problem is whether this can be extended to a fully non-linear symmetry, or equivalently whether the phenomena of partial masslessness extends beyond Einstein spacetimes to completely general spacetimes. In this talk I will present some partial results in this direction which establishes for the first time a class of non-Einstein spacetimes which do indeed propagate a partially massless spin-2 field.