

## A No Go Theorem for Galileon like “Odd P-Forms”

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We explore the possibility for generalized gauge invariant  $p$ -form theories on flat space-time. ‘Galileons’ are a well known example of scalar fields (0-form) that has non-linear extension of the second derivative terms in field equations. We prove that there is an obstruction to extending to non-linear order in the second derivatives for gauge invariant  $p$ -forms when  $p$  is odd. That is the equations of motion for the  $p$ -form field are at most linear in the second derivative of the field.

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