

Abstract Submitted  
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**Gauge Games in a Unified Field Theory** DOUGLAS SWEETSER,  
none — Gauge symmetry is enforced in the Maxwell action written with quaternions  
by a subtraction. The action is rewritten using hypercomplex multiplication rules  
and the same method to ensure gauge symmetry. The hypercomplex field equa-  
tions contain Newton's law of gravity, a time dependent term, and an Ampere-like  
equation. Gauge symmetry for light and gravity can be broken by not doing the  
subtraction. Yet Maxwell and the hypercomplex field strengths can be combined  
to form a gauge-invariant unified action. Neither the Higgs mechanism or general  
relativity are needed.

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none

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