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Title: Meaningfulness as a Symmetry and Invariance Axiom with some Examples of Derived Laws

Abstract: The mathematical expression of a scientific or geometric law typically does not depend on the units of measurement. This makes sense because measurement units have no representation in nature. Any mathematical model or law whose form would be fundamentally altered by a change of units would be a poor representation of the empirical world. This paper formalizes this invariance of the form of the laws as a *meaningfulness* axiom. In the context of this axiom, relatively weak, intuitive constraints may suffice to generate standard scientific or geometric formulas, possibly up to some numerical parameters. We give several examples of such constructions, with a focus on Beer's Law and on the Doppler effect, with some comments on the Lorentz-FitzGerald Contraction.