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Gauge theory of phase and scale

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Abstract: Old Weyl's the idea of scale recalibration freedom and Infeld's and van der Waerden's (IW) ideas concerning geometrical interpretation of natural spinor phase gauge symmetry are discussed in the context of modern models of fundamental particle interactions. It is argued that (IW) gauge symmetry can be naturaly identified with the U(1) symmetry of the Weinberg-Salam model. It is also argued that there are no serious reasons to reject Weyl's gauge theory from consideration. Its inclusion enriches the original Weinberg-Salam theory and leads to prediction of new phenomena that do not contradict experiments.

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