Embedding Fundamental Aspects of the Relational Blockworld Interpretation in Geometric (or Clifford) Algebra

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Abstract

I summarize Silberstein, et. al ' s (2006) discussion of the derivation of the Heisenberg commutators, whose work is based on Kaiser (1981, 1990) and Bohr, et. al. (1995, 2004a,b). I argue that Bohr and Kaiser ' s treatment is not geometric enough, as it still relies on some unexplained residual notions concerning the unitary representation of transformations in a Hilbert space. This calls for a more consistent characterization of the role of i than standard QM can offer. I summarize David Hestenes ' (1985,1986) major claims concerning the essential role Clifford algebras play in such a fundamental characterization of i, and I present a Clifford- algebraic derivation of the Heisenberg commutation relations (taken from Finkelstein, et. al. (2001)). I argue that their derivation exhibits a more fundamentally geometrical approach, which unifies geometric and ontological content. I also point out how some of Finkelstein ' s ontological notions of " chronon dynamics " can give a plausible explanatory account of RBW ' s " geometric relations. "

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Additional Information:	I show how Silberstein et. al.'s derivation of the Heisenberg algebra can be characterized in a more fundamentally geometric manner, using geometric (Clifford) algebra, based on the work of Finkelstein et. al. (2001).

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