Lambek, Joachim
The Lorentz category in special relativity. (English) ⟨Zbl 1243.83012⟩
Hart, Bradd (ed.) et al., Models, logics, and higher-dimensional categories: A tribute to the work of
Mihály Makkai. Proceedings of a conference, CRM, Montréal, Canada, June 18–20, 2009. Providence, RI:
American Mathematical Society (AMS) (ISBN 978-0-8218-7281-9/pbk). CRM Proceedings and Lecture
Notes 53, 169-175 (2011).

Einstein's special relativity was introduced in 1905. Six years later, two authors independently realized
that it could be represented elegantly in terms of biquaternions, that is to say, quaternions with complex
components. Today we may think of the subscripts as objects of an additive category, called a ring
with two objects by Barry Mitchell and known as a Morita context in ring theory, and biquaternions
as morphisms. This paper introduces regular matrix representations of the quaternion units and a third
object into the category so as to cope with the Dirac equation.

For the entire collection see [Zbl 1243.03004].

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MSC:

83A05   Special relativity
18E05   Preadditive, additive categories

Keywords:

special relativity; biquaternions; additive category; Morita context; regular matrix representations; Dirac
equation