

Review of: "The Change of Basis Groupoid"

Mykola Yaremenko

Potential competing interests: No potential competing interests to declare.

The article is dedicated to the change of basis infinite-dimensional vector spaces. The author studies the algebraic structure of change of basis matrices by means of the category theory.

The main result can be presented as the following commutative diagram

$$\begin{array}{ccccc} \text{LTr} & \longleftarrow & \text{CB} & \longrightarrow & \text{UTr} \\ \downarrow & & \downarrow & & \downarrow \\ \text{LAlt} & \longleftarrow & \text{Alt} & \longrightarrow & \text{UAlt} \end{array}$$

which illustrates the existence of subgroupoids that stem from the properties of triangularity and alternation.

Commutativity is guaranteed by theorem 2, 3, and lemma 5 since the independence of triangularity and alternation properties of change of basis matrices.

The results are interesting and can have many important applications and generalizations.