

# Review of: "The Change of Basis Groupoid"

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Potential competing interests: No potential competing interests to declare.

## Summary:

The author frames base changes of finite vector spaces in category theory terms, in particular using the notion of groupoids, and identifies subgroupoids related to triangular and `alternating`, i.e., having a `checker-board support`, with non-zero entries only on equal-parity index pairs.

## Assessment:

I regret to say that I can see no novel research value in this manuscript. The facts of triangular invariance etc are quite commonly known or in any case trivial to establish. Additionally, the proofs are not wrong but appear rather incomplete and handwavy, not exhibiting the rigor that should be expected particularly for such elementary material. The conceptual distinctions between Lemmas, Assumptions and Definitions are not very strong either. As a final and maybe crucial point, I can not see the benefit, e.g. applications, of the category framing (naturally, base changes themselves having applications is understood, but not the core topic here).

On the more positive sides, the manuscript is fairly well structured, although the titling of subsections is a bit unconventional. I didn't come across any language issues save some places where additional commas might have been placed. It appears to be well referenced, but I admit not having checked the references in detail (I noticed however that the capitalizations in the title of the German reference are missing).