

Peer Review

Review of: "Inequalities Revisited"

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The reviewed article is an account of generalized entropic inequalities, a topic investigated by the author and his collaborators since the 1990s. This paper is a popular short account of the topic, whereas the corresponding hard results have already been announced in multiple articles and books such as the "First Course in Information Theory" from 2002.

The present paper proceeds by examples and geometric diagrams rather than by invoking formal theorems. It is readable, although the lack of precise general statements gives an impression of an unfinished work. Perhaps this was intended, but I think that curious readers of the paper may benefit from a more formal exposition of theorems and open problems.

For example, the celebrated isomorphism between entropic inequalities and group inequalities is discussed only by three examples without a general statement. The isomorphisms between entropic inequalities and inequalities concerning determinants and Kolmogorov complexities are more overtly stated and simpler to grasp.

I wonder whether it is possible to go from the determinant inequalities to the group inequalities, bypassing entropies and strong typicality. It would be interesting to connect this topic with quantum entropies, as the author seems to suggest. My knowledge of the topic is too limited to provide more constructive remarks.

The table on page 19 has a too narrow right column, and the formulas in the column are split into multiple rows.

Declarations

Potential competing interests: No potential competing interests to declare.