



Department of Mathematics, University of Illinois at Urbana-Champaign

mathematics

IN SCIENCE & SOCIETY

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Compositions as Trans-Scalar Identity

We define mereologically invariant composition as the relation between a whole object and its parts when the object retains the same parts during a time interval. We argue that mereologically invariant composition is identity between a whole and its parts taken collectively. Our reason is that parts and wholes are equivalent measurements of a portion of reality at different scales in the precise sense employed by measurement theory. The purpose of these scales is the numerical representation of primitive relations between quantities of objects. To show this, we prove representation and uniqueness theorems for composition. Thus, mereologically invariant composition is trans-scalar identity.

4:00 p.m. | Tuesday, April 27, 2021

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