**Wilson, Trevor M.**

**A continuous movement version of the Banach-Tarski paradox: a solution to de Groot's problem.** (English) Zbl 1134.03028

J. Symb. Log. 70, No. 3, 946-952 (2005).

Summary: In 1924 Banach and Tarski demonstrated the existence of a paradoxical decomposition of the 3-ball $B$, i.e., a piecewise isometry from $B$ onto two copies of $B$. This article answers a question of de Groot from 1958 [see *S. Wagon*, The Banach-Tarski paradox. Cambridge etc.: Cambridge University Press (1985; Zbl 0569.43001)] by showing that there is a paradoxical decomposition of $B$ in which the pieces move continuously while remaining disjoint to yield two copies of $B$. More generally, we show that if $n \geq 2$, any two bounded sets in $\mathbb{R}^n$ that are equidecomposable with proper isometries are continuously equidecomposable in this sense.

**MSC:**

03E25 Axiom of choice and related propositions
28E15 Other connections with logic and set theory

**Full Text:** DOI

**References:**

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