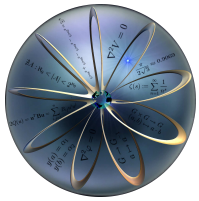

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ham sandwich theorem

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Let $A_1, \ldots, A_m$ be measurable bounded subsets of $\mathbb{R}^m$. Then there exists an $(m-1)$-dimensional hyperplane which each A_i into two subsets of equal measure.

This theorem has such a colorful because in the case $m = 3$ it can be viewed as cutting a ham sandwich in half. For example, A_1 and A_3 could be two pieces of bread and A_2 a piece of ham. According to this theorem it is possible to make one to simultaneously all three objects exactly in half.