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A note on splittable spaces

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Abstract: A space X is splittable over a space Y (or splits over Y) if for every $A \subset X$ there exists a continuous map $f : X \rightarrow Y$ with $f^{-1}fA = A$. We prove that any n -dimensional polyhedron splits over \mathbf{R}^{2n} but not necessarily over \mathbf{R}^{2n-2} . It is established that if a metrizable compact X splits over \mathbf{R}^n , then $\dim X \leq n$. An example of n -dimensional compact space which does not split over \mathbf{R}^{2n} is given.

Keywords: splittable, polyhedron, dimension

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