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Continuum ways of approaching a continuum with the ray

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Abstract: In 2014, V. Martínez-de-la-Vega and P. Minc proved that, for an arbitrary nondegenerate metric continuum X, there is an uncountable collection $\mathcal{K}$ of topologically distinct metric compactifications of $[1,\infty)$, having X as the remainder. It is not clear without the continuum hypothesis that cardinality of $\mathcal{K}$ is $2^{\aleph_0}$. However, the continuum hypothesis is rarely necessary in the theory of metric continua. To support this assertion, we present an explicit construction of a compact metric space K with $2^{\aleph_0}$ mutually not homeomorphic components each of which is a compactification of $[1,\infty)$, having a copy of X as the remainder.