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Title: On the topology of the Reeb graph

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The Reeb quotient space R_f of a function $f : X \to \mathbb{R}$, known as the Reeb graph, can have various properties depending on X and f. In the classical case of a smooth function on a closed manifold with a finite number of critical points, R_f has the structure of a finite graph. Recently, Saeki showed that the same is true if f is a smooth function with a finite number of critical values. Expanding his result, we prove that for an arbitrary smooth function on a closed connected manifold, the Reeb space R_f still has a "good" structure; namely, R_f is a 1-dimensional Peano continuum homotopy equivalent to a finite graph.

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