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## Structural stability theorem

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Let M be a compact differentiable manifold and let  $f:M\to M$  be a  $C^r$  diffeomorphism.

Then, f is structurally stable in the  $C^1$  topology if and only if it is Axiom A and satisfies the strong transversality condition. The question of knowing if this is valid for the  $C^r$  topology,  $r \geq 2$  is still open.