



planetmath.org

Math for the people, by the people.

Hartman-Grobman theorem

Canonical name	HartmanGrobmanTheorem
Date of creation	2013-03-22 14:25:15
Last modified on	2013-03-22 14:25:15
Owner	Koro (127)
Last modified by	Koro (127)
Numerical id	6
Author	Koro (127)
Entry type	Theorem
Classification	msc 37C25
Synonym	Grobman-Hartman theorem
Synonym	Hartman's theorem

Let  $U$  and  $V$  be open subsets of a Banach space  $E$  such that  $0 \in U \cap V$ . If a diffeomorphism  $f: U \rightarrow V$  has  $0$  as a hyperbolic fixed point, then  $f$  and  $Df(0)$  are locally topologically conjugate at  $0$ , i.e. there are neighborhoods  $\tilde{U}$  and  $\tilde{V}$  of  $0$  and a homeomorphism  $h: \tilde{U} \rightarrow \tilde{V}$  such that  $Df(0)h = hf$ .