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Huyi Hu* (hhu@math.msu.edu), **Yujun Zhu** and **Yunhua Zhou**. *Quasi-stability and quasi-shadowing for partially hyperbolic diffeomorphisms*. Preliminary report.

The motivation of the work is to study topological properties of partially hyperbolic systems which are similar to those of uniformly hyperbolic systems. We try to obtain some properties similar to these of uniformly hyperbolic systems by “ignoring” the motions along the center direction.

We show that any partially hyperbolic systems (i) are quasi-stable in the sense that for any homeomorphism g C^0 -close to f , there exist a continuous map π from M to itself and a family of locally defined continuous maps $\{\tau_x : x \in M\}$, which send points along the center direction, such that

$$\pi \circ g(x) = \tau_{f(x)} \circ f \circ \pi(x) \forall x \in M;$$

and (ii) have quasi-shadowing property in the sense that for any pseudo orbit $\{x_k\}_{k \in \mathbb{Z}}$, there is a sequence of points $\{y_k\}_{k \in \mathbb{Z}}$ shadowing it in which y_{k+1} is obtained from $f(y_k)$ by a motion τ along center direction.

In particular, if f has C^1 center foliation, then we can make the motion τ along the center foliation.

As application we obtain some continuity properties for topological entropy. Also, we show that if the center foliation is uniformly compact, then there is an analogue of spectral decomposition for center nonwandering set. (Received February 19, 2013)