

Lions, J.-L.; Sanchez-Palencia, E.

On some spaces in the shell theory and on sensitivity. (Sur quelques espaces de la théorie des coques et la sensibilité.) (French) [Zbl 0895.73042](#)

Cioranescu, Doina (ed.) et al., Homogenization and applications to material sciences. Proceedings of the international conference, Nice, France, June 6–10, 1995. Tokyo: Gakkotosho. GAKUTO Int. Ser., Math. Sci. Appl. 9, 271-278 (1995).

Summary: The theory of thin shells leads to the definition of pre-Hilbertian norms (i.e. norms for which the space is not complete) on certain spaces of smooth vector functions defined on two-dimensional manifolds. In certain cases, the completion procedure goes out of the space of distributions. Correspondingly, the dual space does not contain the space of infinitely differentiable functions with compact support, and some kind of instability appears in the Lax-Milgram problem, which is said to be sensitive. A general theorem of sensitivity is proved.

For the entire collection see [\[Zbl 0873.00028\]](#).

MSC:

[74K15](#) Membranes
[35Q72](#) Other PDE from mechanics (MSC2000)

Cited in **2** Documents

Keywords:

thin shells; pre-Hilbertian norms; spaces of smooth vector functions; two-dimensional manifolds; completion procedure; dual space; Lax-Milgram problem