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(S) فراغات فوق البرميلية من النوع

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**Abstract** : We introduce a new class of semi-convex spaces called  $S$ -hyperbarrelled spaces and study some results about these spaces. Some of these results are the following:  
i. Let  $E$  be an  $S$ -hyperbarrelled space,  $F$  a semi-convex space and  $f \in \mathcal{L}(E, F)$  a linear, sequentially continuous and almost sequentially open map. Then  $F$  is an  $S$ -hyperbarrelled space.  
ii. Let  $E$  be an  $S$ -hyperbarrelled space and  $F$  a semi-convex space. If  $f: E \rightarrow F$  is a linear mapping, then  $f$  is almost sequentially continuous.  
iii. Let  $E$  be an  $S$ -hyperbarrelled space and  $F$  a semi-convex space. Then each simply bounded set  $H$  of linear sequentially continuous mappings from  $E$  to  $F$  is equi-sequentially continuous. We also obtain analogues of two well-known theorems of functional analysis, namely, the closed graph theorem and Banach-Steinhaus theorem for  $S$ -hyperbarrelled spaces. The closed graph theorem is the following: Let  $E$  be an  $S$ -hyperbarrelled space and  $F$  a complete metrizable semi-convex space. If  $f: E \rightarrow F$  is a linear mapping of  $E$  into  $F$  such that the graph  $G_f$  of  $f$  is sequentially closed, then  $f$  is sequentially continuous. The Banach-Steinhaus theorem is the following: Let  $E$  be an  $S$ -hyperbarrelled space and  $F$  a semi-convex space. If  $\{f_n\}$  is a sequence of linear, sequentially continuous mappings from  $E$  to  $F$  such that  $\{f_n(x)\}$  converges pointwise to  $f_0(x)$ , then  $f_0$  is a sequentially continuous linear mapping of  $E$  into  $F$  and the convergence is uniform on  $S$ -precompact subsets of  $E$ .

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