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On the Pták homomorphism theorem. (English) Zbl 0708.46013

Summary: A brief and accessible proof is given of an extension of the Pták homomorphism theorem to a larger class of spaces - spaces that are not necessarily assumed to be locally convex. This is done by first proving a counterpart of the Bourbaki-Grothendieck homomorphism theorem for the non-locally-convex case. Our presentation utilizes the simplifying properties of seminorms.

MSC:
46A30 Open mapping and closed graph theorems; completeness (including $B$-, $B_r$-completeness)
46A08 Barreled spaces, bornological spaces
46A16 Not locally convex spaces (metrizable topological linear spaces, locally bounded spaces, quasi-Banach spaces, etc.)

Keywords:
semi-barrelled space; semi-B-complete; quotient seminorm; adequate map; small disjoint; semi-open; weakly open; nearly semi-open; nearly semi-continuous; Pták homomorphism theorem; Bourbaki-Grothendieck homomorphism theorem for the non-locally-convex case