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## The weak and strong extensions of a linear operator

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**Abstract :** In this paper we define weak and strong extensions of a linear operator  $A : D(A) \subset E \rightarrow F$ , where  $E$  and  $F$  are topological vector spaces. By counter examples we stand out the difficulties which occur in the formulation of reasonable assumptions over the spaces  $E$ ,  $F$  and the operator  $A$  in order to prove the identity between two types of extensions.

**Key words and phrases :** closed operator, weak extension, strong extension

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