Lipschitz properties of convex mappings

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Abstract

We shall present some results on Lipschitz properties of convex mappings. One considers the general context of mappings (called also convex operators) defined on an open convex subset Ω of a locally convex space X and taking values in a locally convex space Y ordered by a normal cone. Our aim is to show that some geometric properties (monotonicity of the slope, the normality of the seminorms) allow to extend the proofs from the scalar case to the vector one. In this way the proofs become more transparent and natural. Some results on Lipschitz properties of continuous convex functions defined on metrizable topological vector spaces are included as well.

One proves also equi-Lipschitz properties for pointwise bounded families of continuous convex mappings, provided the source space X is barrelled.