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A Characterization of Generalized Monotone Normed Cones

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摘要

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Abstract Let C be a cone and consider a quasi-norm $\| \cdot \|$ defined on it. We study the structure of the couple $(C, \| \cdot \|)$ as a topological space in the case where the function $\| \cdot \|$ is also monotone. We characterize when the topology of a quasi-normed cone can be defined by means of a monotone norm. We also define and study the dual cone of a monotone normed cone and the monotone quotient of a general cone. We provide a decomposition theorem which allows us to write a cone as a direct sum of a monotone subcone that is isomorphic to the monotone quotient and other particular subcone.

Key words [quasi-norm](#) [monotone](#) [cones](#)

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