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Criteria for weak compactness of vector-valued integration maps

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Abstract: Criteria are given for determining the weak compactness, or otherwise, of the integration map associated with a vector measure. For instance, the space of integrable functions of a weakly compact integration map is necessarily normable for the mean convergence topology. Results are presented which relate weak compactness of the integration map with the property of being a bicontinuous isomorphism onto its range. Finally, a detailed description is given of the compactness properties for the integration maps of a class of measures taking their values in ℓ^1 , equipped with various weak topologies.

Keywords: weakly compact integration map, factorization of a vector measure

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