

DIFFERENT KINDS OF INTEGRALS IN THE SAME FORMULA

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We study some relationships between the Bartle–Dunford–Schwartz integral of a scalar valued function f , with respect to a vector measure m , and the Dunford, Pettis or Bochner integrals of its (vector valued) distribution function m_f . The Dunford (or Pettis) integrability of m_f is strongly related to the weak integrability (or the integrability) of f in the sense of Bartle–Dunford–Schwartz. In the case of the Bochner integrability of m_f , a new function space appears. It is defined through the Choquet integrability of f with respect to the semivariation $\|m\|$ of the measure m . We also study this space and present its main properties.

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