

## Twofold Integral and Multi-step Choquet Integral

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*Abstract:* In this work we study some properties of the twofold integral and, in particular, its relation with the 2-step Choquet integral. First, we prove that the Sugeno integral can be represented as a 2-step Choquet integral. Then, we turn into the twofold integral studying some of its properties, establishing relationships between this integral and the Choquet and Sugeno ones and proving that it can be represented in terms of 2-step Choquet integral.

*Keywords:* aggregation; Choquet and Sugeno integrals; multi-step integral; twofold integral;

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