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Darinka Dentcheva* (darinka.dentcheva@stevens.edu), 1 Castle Point on Hudson, Hoboken, NJ 07030, and **Andrzej Ruszczyński**. *Common mathematical foundations of the expected utility and the dual utility theory.*

We show that the main results of the expected utility and dual utility theories can be derived in a unified way based on two fundamental mathematical ideas: the separation principle of convex analysis, and the integral representations of continuous linear functionals from functional analysis. Our analysis reveals the dual character of utility functions. Additionally, we derive new integral representations of dual utility models. (Received June 06, 2015)