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Zach Feinstein* (zfeinstein@ese.wustl.edu) and **Birgit Rudloff**. *Computation of Dynamic Multivariate Risk Measures and a Relation to a Set-Valued Bellman's Principle.*

A method for calculating multi-portfolio time consistent multivariate risk measures in discrete time is presented. Market models for d assets with transaction costs or illiquidity are considered on a finite probability space. The set of risk compensating portfolio vectors at each time and state is calculated recursively backwards in time along the event tree. We motivate why the proposed procedure can be seen as a set-valued Bellman's principle. We give conditions under which the backwards calculation reduces to solving a sequence of linear, respectively convex vector optimization problems. Numerical examples include superhedging under illiquidity, the entropic set-valued risk measure, and the composed set-valued average value at risk. (Received September 11, 2014)