1116-90-1232   **Zachary Feinstein*** (`zfeinstein@ese.wustl.edu`) and **Birgit Rudloff**. *A recursive algorithm for set-valued risk measures and relation to set-valued Bellman's principle.*

A method for calculating multiportfolio time consistent set-valued risk measures in discrete time is presented. Market models for d assets with transaction costs or illiquidity and possible trading constraints are considered on a finite probability space. The set of capital requirements at each time and state are 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 of the sets reduces to solving a sequence of linear and convex vector optimization problems. Numerical examples are given and include superhedging under illiquidity, the set-valued entropic risk measure, and the multiportfolio time consistent version of the relaxed worst case risk measure and of the set-valued average value at risk. (Received September 18, 2015)

1