Non-Monotone Risk Measures and Monotone Hulls

It has become a standard in modern risk management to assess the riskiness of a portfolio by means of a risk measure satisfying the axioms of convexity, monotonicity and cash-invariance. We characterize the two latter properties using convex duality. As a main result, for any function f, we find the greatest
closed convex monotone and cash-invariant function majorized by f.
We then apply our results to some well-known risk measures and problems
arising in connection with insurance regulation.

This talk is based on two papers (both online on http://www.mathematik.uni-muenchen.de/~filipo/pubpre.html):

- Monotone and Cash-Invariant Convex Functions and Hulls (with Michael Kupper), Insurance: Mathematics and Economics 41, 1-16, 2007.

- A Note on the Swiss Solvency Test Risk Measure (with Nicolas Vogelpoth), forthcoming in Insurance: Mathematics and Economics.