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Title: Risk Aversion in a Mixed-Integer Nonlinear Approach to Support Decision-Making for a Hydro Power Producer

Abstract: In this paper, a mixed-integer nonlinear approach is proposed to support decision-making for a hydro power producer, considering a head-dependent hydro chain. The aim is to maximize the profit of the hydro power producer from selling energy into the electric market. As a new contribution to earlier studies, a risk aversion criterion is taken into account, as well as head-dependency. The volatility of the expected profit is limited through the conditional value-at-risk (CVaR). The proposed approach has been applied successfully to solve a case study based on one of the main Portuguese cascaded hydro systems. Copyright (C) 2010 Praise Worthy Prize S.r.l. All rights reserved.

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