## **Conditional Value at Risk Maximizing Auction**

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We study the Conditional Value at Risk (CVaR) of a risk-averse seller in independent private value (IPV) auctions. For single-item auctions, we show that the second-price auction with a reserve price maximizes CVaR. This result aligns with Myerson [1981] but differs in the optimal reserve price that depends on the confidence level of CVaR. We found that the choice of reserve price plays a more important role under CVaR — the performance gap between the optimal auction and the second-price auction without a reserve in terms of CVaR is larger than the gap in expected revenue. For multi-item auctions, we use Dütting et al., [2019] framework to numerically simulate the CVaR-maximizing auction and compare its performance against that of the VCG mechanism without a reserve price.