**Homework 3**

**Problem 1.**

Read paper:

Zabarankin M., Pavlikov K. and S. Uryasev. Capital Asset Pricing Model (CAPM) with Drawdown Measure. European Journal of Operational Research, 234(2), 2014, 508–517.

<http://uryasev.ams.stonybrook.edu/wp-content/uploads/2014/01/CDaR-CAPM-published.pdf>

Calculate drawdown beta with confidence level 0.9 and 1 for gold.

Download end of the day values from Yahoo Finance for the recent 15 years for SP500 and for GLD exchange traded fund.

Drawdowns should be calculated on daily basis. Gold = GLD, Market = SP500, recent 15 years of data should be used for calculations of drawdown betas. Consider uncompounded cumulative returns.