

1 Meeting Details

- Date: 23.01.2025
- Start Time: 14:00
- End Time: 15:00

2 Attendees List:

- Present:
 - Sophia Munker
 - Chiheb Ben Hammouda
 - Nadhir Ben Rached
 - Manuel Holschbach

3 Summary

- Presented numerical results for the estimation of $\mathbb{P}(X > x)$ using MLMC with and without importance sampling
- Unexpectedly, the method seems to work better than expected in the estimation of rare event probabilities
- Task: Investigate why we observe this behaviour and if it holds for even rarer events ($x > 7$)
- To this end:
 - Plot sample paths on successive levels with/without importance sampling
 - Plot histograms on successive levels with/without IS
 - Plot Histogram of difference with/without IS
 - Plot number of IS steps
 - Estimate $\mathbb{P}(X > x)$ for higher x
- Idea: Importance sampling pushes one of the levels higher than the threshold, while leaving the other level below the threshold