1 Meeting Details

- Date: 09.12.2024
- Start Time: 15:00
- End Time: 16:00

2 Attendees List:

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

3 Summary

- Summarized the main points for the paper "Quasi-Monte Carlo Methods Applied to Tau-Leaping in Stochastic Biological Systems" by Beentjes, C.H.L. and Baker, R.E. (https://doi.org/10.1007/s11538-018-0442-2)

- Discussed possible ways to tackle the discontinuities of the inverse Poisson distribution in the update step of the QMC-τ-leap algorithm
  - MLMC approach: Possibly use the CLE method on coarser grids and transition to the τ-leap on finer grids
  - Marginalize over one dimension to smooth the discontinuities
  - Try to make the system closer to the dynamics of the Langevin equation

- Proposed that we should focus on the second topic (MLMC + Importance sampling)

- Introduced a biweekly meeting schedule on mondays at 3 pm, starting from 06.01.2025