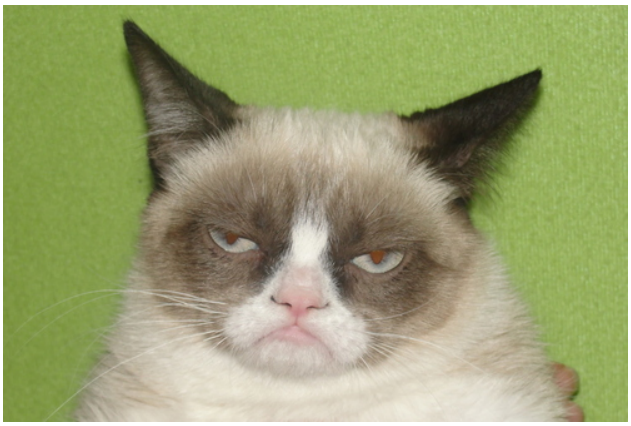
When the cat goes: the paper is ready.



Understanding the effect of selfish behaviour in a series of two queues.

Jason Young, Vincent Knight

December 31, 2013

Abstract

Hierarchical queues in HC; PoA; Simulation model; Heuristics developed to obtain optimal policies;

1 Introduction

- Hierarchy in real life queues;
- Review of papers in BQT;
- PoA;
- Discussion of situation being modelled in this paper.

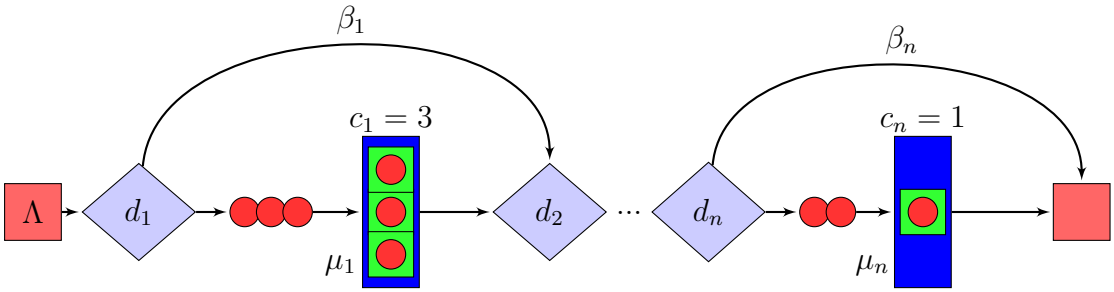


Figure 1: Diagram of n stations in series

2 Model

- Parameters;

- Optimal behaviour;
- Selfish behaviour.
- Cost (how to verify that cost is correct?).

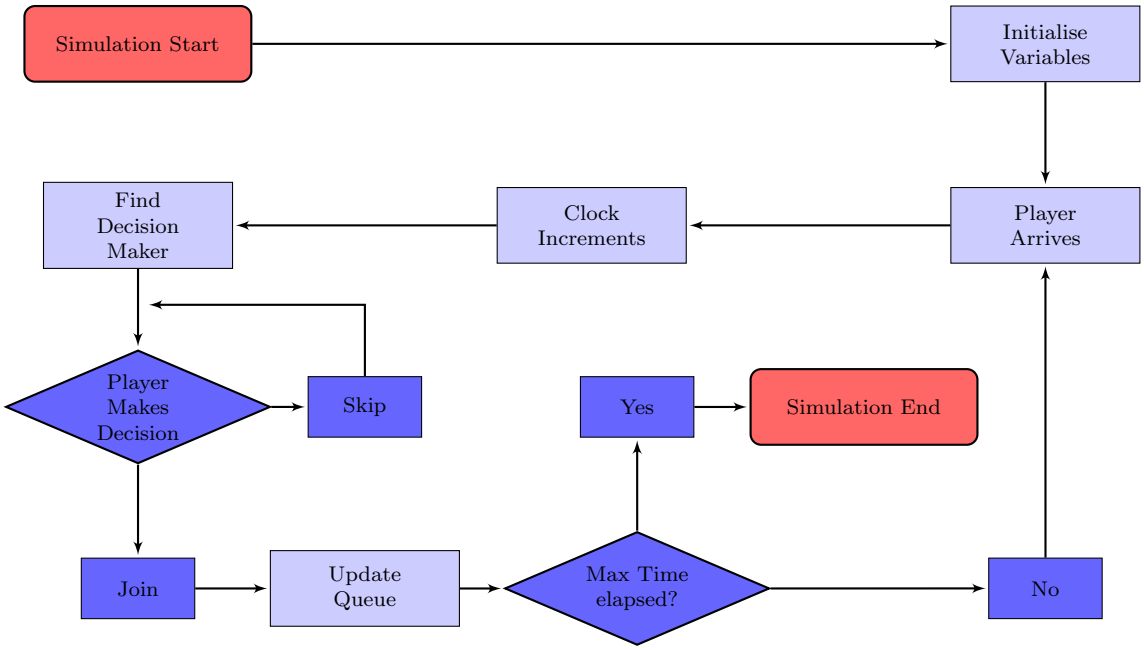


Figure 2: Flow chart describing the simulation model

3 Heuristic Optimal Policies

- Heuristic 1: basic search;
- Heuristic 2: based on assumption of Markovian arrival rate at second queue;
- Heuristic 3: Based on Naor which applies only for single server systems.

4 Results

- Scenarios...

5 Conclusions and Further work

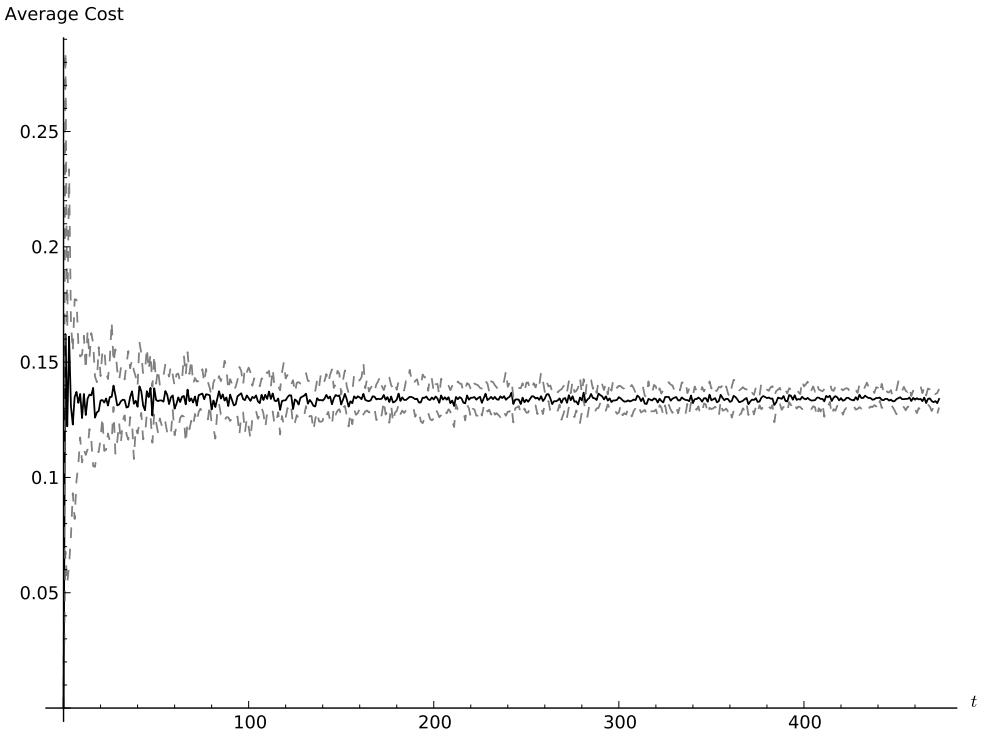


Figure 3: Run time

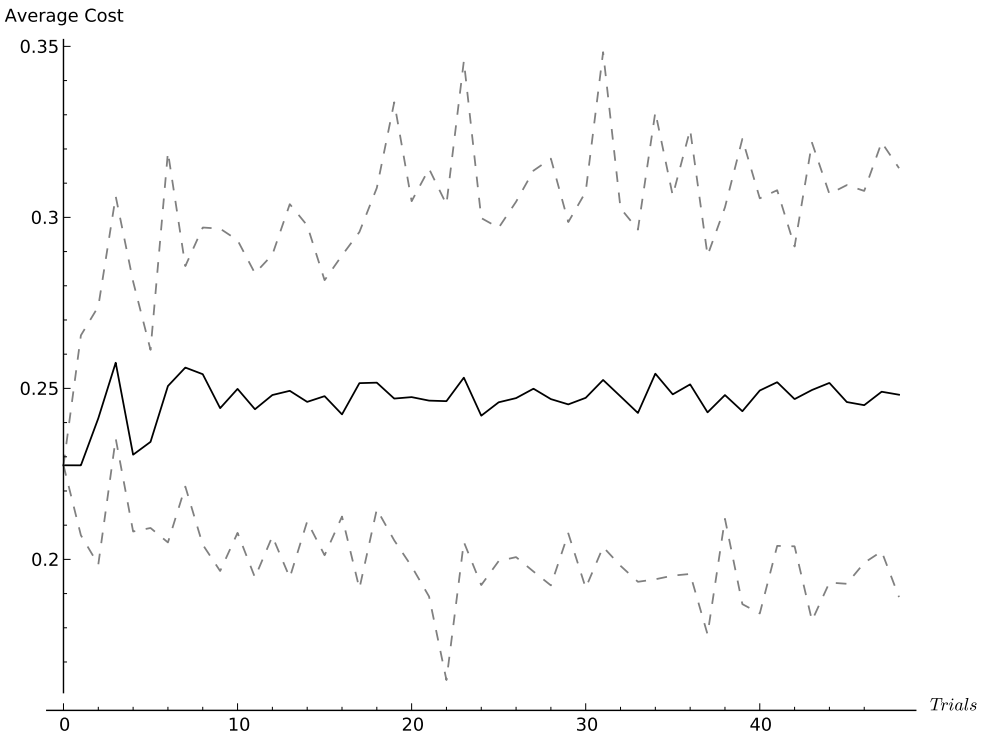


Figure 4: Trials

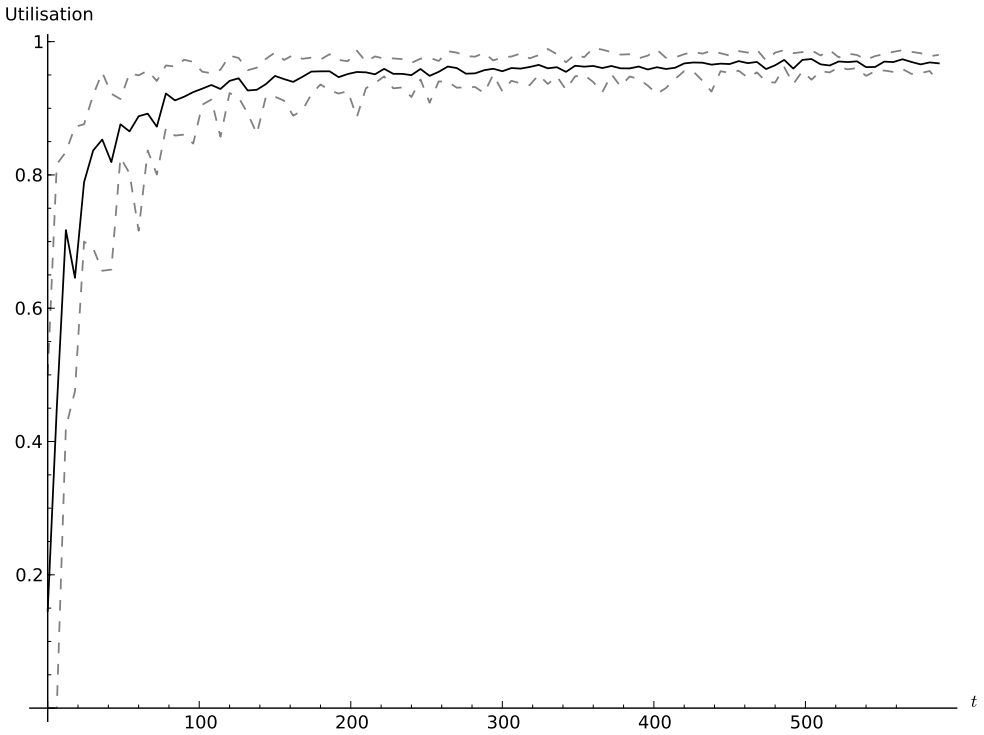


Figure 5: Warm up

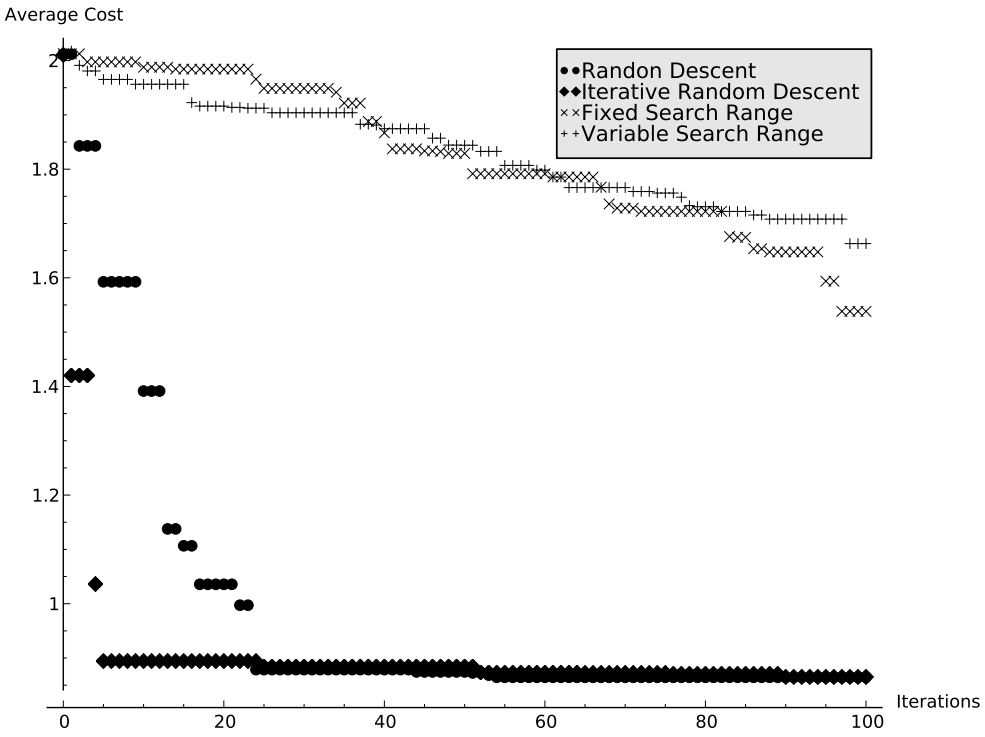


Figure 6: Comparing basic search

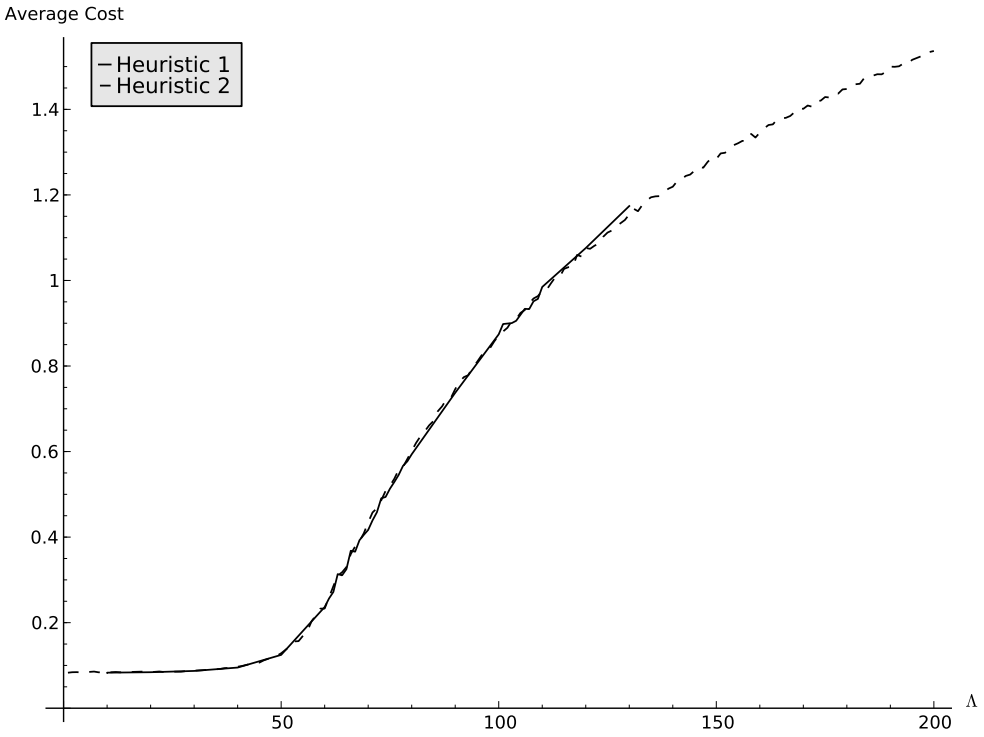


Figure 7: Comparing Heuristic 1 and 2

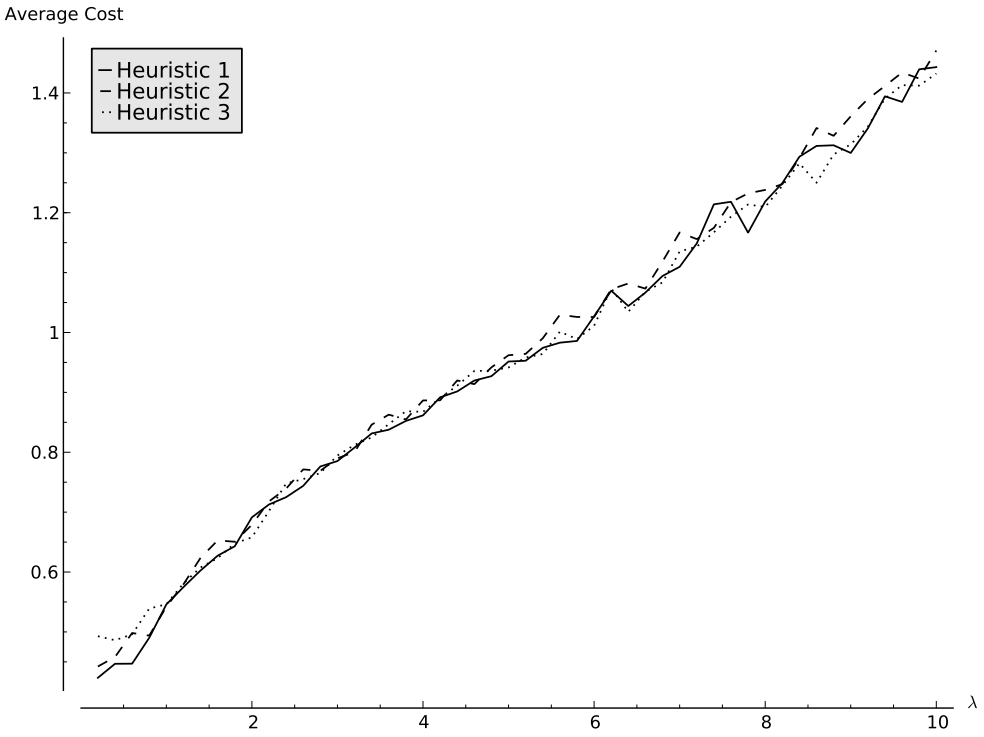


Figure 8: Comparing all heuristics

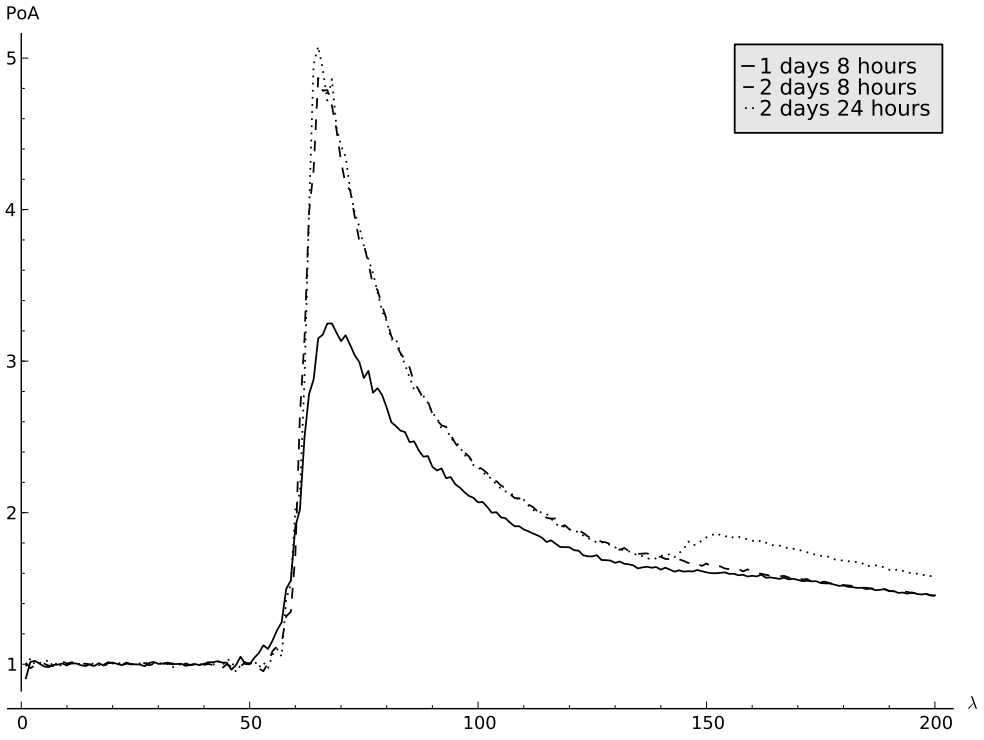


Figure 9: PoA for varying lambda

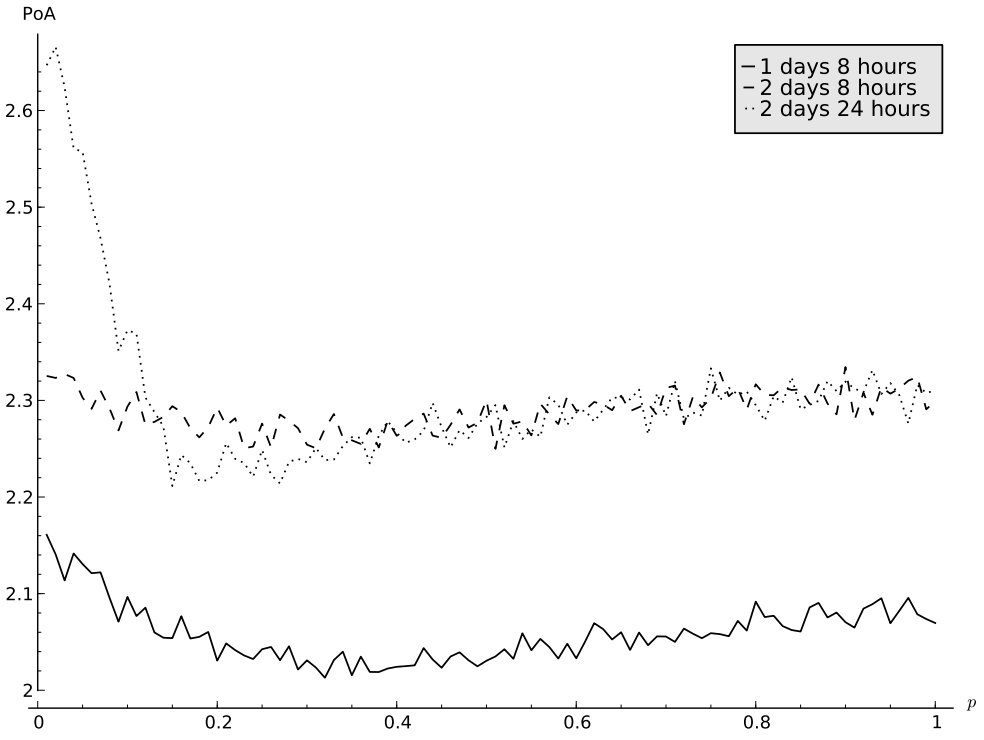


Figure 10: PoA for varying exit prob

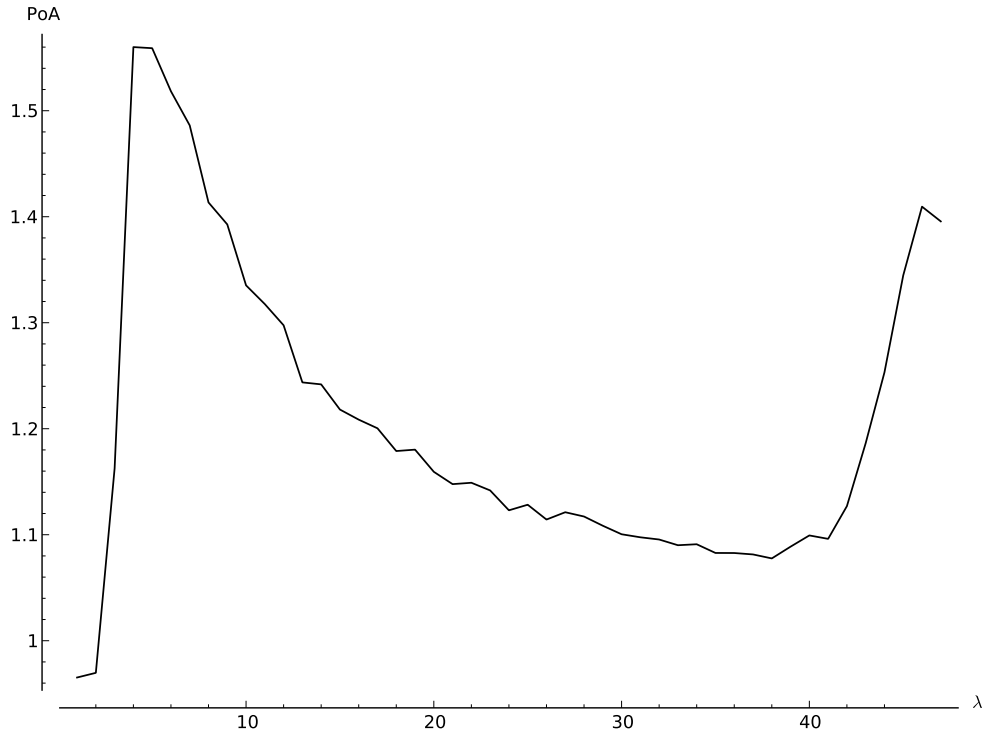


Figure 11: Another set of scenarios