

# Comet, exercises 4

Bring your answers to next course (Oct 12)

## 1 Expansion (reloaded)

Recall the answer to the last exercise (giving a monotone function whose greatest fixpoint is expansion). Using compatibility and the tools from the course, show that the following function is sound for expansion in a modular way.

$$R \mapsto \lambda R \sim$$

## 2 Automata

Give two reasonably distinct deterministic automata over the alphabet  $\{a, b\}$ , for the language of words with exactly twice as many  $b$  than  $a$ . Show them equivalent using coinduction.