[1][orange!70!red]on line,before upper=,
arc=0.8ex,colback=1!30!white,colframe=1!50!black,
boxsep=0pt,left=1.5pt,right=1.5pt,top=1pt,bottom=1pt,
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[1][ForestGreen!70!red]on line,before upper=,
arc=0.8ex,colback=1!30!white,colframe=1!50!black,
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CCS, PDL and Bisimularity

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Outline

Introduction I

- CCS Calculus of Communication systems is a process calculus which introduced by Robin Milner in the 1980's[**?**]. It builds a general mathematical model, and skill in manipulating terms or expressions in oder to analyse the behaviour of these systems.
- PDL is a formal system for reasoning about programs. Besides the traditional formalizing correctness specifications and proving their rigorously in a program.
- Forgetting

Motivation and introduction

Propositional Dynamic Logic PDL is a formal system for reasoning about programs. The most common operators are: non-deterministic choice $(\cup)$, sequential composition $(;)$, iteration $(*)$ and test $(?)$.

- This logic's semantics is given by Labeled Transition Systems, where R_π stand for a binary relation for each Program π.
- PDL can be used to prove that two programs π_1 and π_2 are logically equivalent $\models \langle\pi_1\rangle p \leftrightarrow \langle\pi_2\rangle p$ (where $\langle\pi_i\rangle p$ means that there is an execution of program π_i, such that after it, p holds). [**?**]
- Try to show that there is the equivalence between bisimilar processes and logically equivalent programs in CCS.

References I