

ACPH

System Description for CoCo 2016

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ACPH

Automated **C**onfluence **P**rover for **H**igher-order rewriting systems

- entrant of **HRS** category
- written in **Standard ML of New Jersey**
- use external termination checker

Criteria Used

- If a HRS \mathcal{R} is weakly orthogonal (left-linear and all critical pairs are trivial), then \mathcal{R} is confluent.
- If a HRS \mathcal{R} is left-linear and development closed, then \mathcal{R} is confluent.
- If a HRS \mathcal{R} has distinct normal forms, then \mathcal{R} is not confluent.
- If a HRS \mathcal{R} is terminating, then all critical pairs are joinable iff \mathcal{R} is confluent.

- **ACPH** is provided as a heap image that can be loaded into **SML/NJ** runtime systems.
- The tool **Wanda** has been used for proving termination.

```
$tree .  
|  
|----- acph.x86-linux  
|  
|----- resources  
|  
|-----|  
|-----|----- satsolver  
|-----|----- timeout  
|-----|----- ttt2  
|  
|----- tmp  
|----- wanda.exe
```

```
$sml @SMLload=acph.x86-linux sample.trs
```