

# ACPH

## System Description for CoCo 2017

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## 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
- any change from 2016?

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- future plan?

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- future plan? — **some efforts are going on.**

## 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
```