2nd International Confluence Competition

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Institute of Computer Science
University of Innsbruck
Austria

Eindhoven       June 28, 2013
Results (details)

**main track (0% completed)**

<table>
<thead>
<tr>
<th>tool</th>
<th>score</th>
<th>yes</th>
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<th>maybe</th>
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</thead>
<tbody>
<tr>
<td>ACP</td>
<td></td>
<td>0/148</td>
<td>0 0 0 148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI</td>
<td></td>
<td>0/148</td>
<td>0 0 0 148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>saigawa</td>
<td></td>
<td>0/148</td>
<td>0 0 0 148</td>
<td></td>
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**certified track (0% completed)**

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<tbody>
<tr>
<td>CeTA</td>
<td></td>
<td>0/65</td>
<td>0 0 0 65</td>
<td></td>
<td></td>
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</table>

**Cops #1**

```
VAR x y
(RULES
  f(x,y) -> x
  f(x,y) -> f(x,g(y))
  g(x) -> h(x)
  F(g(x),x) -> F(x,g(x))
  F(h(x),x) -> F(x,h(x))
)(COMMENT Example 6 of \cite{AT97})
```

ACP: waiting ...  CSI: waiting ...  saigawa: waiting ...
Overview

- CoCo 2013
- Tools
- Cops
- StarExec
- Award Ceremony
Facts

- 2\textsuperscript{nd} International Confluence Competition
- live
- two categories
  - main track: (dis)prove confluence of first-order TRS
  - certified track: certify confluence (dis)proof
Facts

- 2\textsuperscript{nd} International Confluence Competition
- live
- two categories
  - main track: (dis)prove confluence of first-order TRS
  - certified track: certify confluence (dis)proof
- first competition powered by StarExec
Tools

ACP (Tohoku University)

- Takahito Aoto & Yoshihito Toyama
- since 2009 (current version: 0.40)
- Standard ML
- new: strongly weight preserving root-E-closed, weakly-non-overlapping non-collapsing shallow, tree automata
## Tools

### ACP (Tohoku University)
- Takahito Aoto & Yoshihito Toyama
- since 2009 (current version: 0.40)
- Standard ML
- new: strongly weight preserving root-E-closed, weakly-non-overlapping non-collapsing shallow, tree automata

### CSI (University of Innsbruck)
- Harald Zankl & Bertram Felgenhauer & Benjamin Höller & Aart Middeldorp
- since 2011 (current version: 0.3)
- OCaml
- new: Klein-Hirokawa 2012
Tools

saigawa (JAIST)

- Nao Hirokawa & Dominik Klein
- since 2011 (current version: 1.5)
- OCaml
- planned: commutation criterion
Tools & Certifiers

**saigawa (JAIST)**
- Nao Hirokawa & Dominik Klein
- since 2011 (current version: 1.5)
- OCaml
- planned: commutation criterion

**CeTA (University of Innsbruck)**
- Julian Nagele & René Thiemann
- since 2009 (termination), since 2012 (confluence)
- current version: 2.10
- Isabelle/HOL
- new: non-confluence (tcap), strongly-closedness
Cops

- Confluence problems
- Search & Query Interface
- Submission & Download Interface
- Problem Selection

46.trs

1 (VAR x)
2 (RULES
3  F(x, x) -> A
4  F(x, G(x)) -> B
5  C -> G(C)
)
6 (COMMENT from p.813 of \cite{Hue80})

Tags: non_confluent, non_left_linear, non_linear, locally_confluent, non_orthogonal, non_terminating, non_ground
StarExec

Hardware
- now: 32 nodes (2 quad-core, 2.40 GHz, 128 GB)
- 2014: 150 nodes

Software
- tool/benchmark submission/management
- tool execution
- queue management (Coco queue has 4 nodes)
- (some) statistics
And the winner was

2012 (125 problems)

- **saigawa**: 2
- **ACP**: 1
- **CSI**: 3
And the winner was

### 2012 (125 problems)

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<tr>
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<td>2</td>
<td>1</td>
<td>3</td>
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<tr>
<td>no</td>
<td>18</td>
<td>18</td>
<td>21</td>
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<tr>
<td>time</td>
<td>1310</td>
<td>222</td>
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- 2013 (148 problems)
And the winner is

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2012 (27 problems)

CeTA

2

1

3
And the winner was

2012 (27 problems)

- Yes: 2
- No: 3
- Time: 1

CeTA
And the winner is

### 2012 (27 problems)

- **CeTA**: Yes - 2, No - 1, Time - 3

### 2013 (65 problems)

- **CeTA**: Yes - 2, No - 1, Time - 3
And the winner is

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