

7th International Confluence Competition

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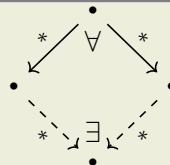
CoCo 2018

- tools try to show confluence and related properties of rewrite systems
- ran live on July 12 during FSCD, powered by StarExec



Categories

- TRS first-order rewrite systems
- CTRS first-order conditional rewrite systems
- HRS higher-order rewrite systems
- CPF certified confluence proofs



- GCR ground confluence of many-sorted TRSs
- UN unique normalization of TRSs: $\text{NFP} \implies \text{UNC} \implies \text{UNR}$

$$\text{gcd}(s(x), s(y)) \rightarrow \text{gcd}(x - y, s(y)) \Leftarrow y < x \rightarrow^* \text{true}$$

$$\text{gcd}(s(x), s(y)) \rightarrow \text{gcd}(s(x), y - x) \Leftarrow x < y \rightarrow^* \text{true}$$

Scoring

Valid Answers

YES/NO on first line followed by proof

Regular Categories

score is YES+NO

UN Category

	NFP	UNC	UNR	none
NFP $\implies$ UNC $\implies$ UNR	5	4	3	0
$\neg$ NFP	–	5	4	3
$\neg$ UNC	–	–	5	4
$\neg$ UNR	–	–	–	5

Contestants

	TRS	CTRS	CPF		HRS	GCR	UN		
			TRS	CTRS			NFP	UNC	UNR
ACP	✓	✓	✓					✓	
AGCP						✓			
CeTA			✓	✓					
CO3		✓							
CoLL-Saigawa	✓								
ConCon		✓		✓					
CSI	✓		✓				✓	✓	✓
CSI ^{ho}					✓				
FORT						✓	✓	✓	✓
SOL					✓				

Cops and CoCoWeb

Confluence Problems (Cops)



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format: [all](#) [trs](#) [etrs](#) [ctrs](#) [hrs](#) [mstrs](#) [+](#)

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1.trs

```
(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
doi:10.1007/BFb0027006
[[ Example 6
submitted by: Takahito Aoto, Junichi Yoshida, and Yoshihito Toyama
])
```

format: [trs](#) [+](#)
properties: [confluent](#) [literature](#) [locally_confluent](#) [non_ground](#) [non_left_linear](#) [non_linear](#) [non_orthogonal](#) [+](#)
[non_right_ground](#) [non_right_linear](#) [non_terminating](#) [non_weakly_orthogonal](#) [+](#)
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[csi2017fullrun](#) [csi_unc2017fullrun](#) [csi_unr2017fullrun](#) [fullrun2017](#) [+](#)

Cops and CoCoWeb

CoCoWeb



[Home](#) [Web Interface](#)

Tools

2017

CTRS

HRS

TRS

2016

2015

2014

2013

2012

Enter a **rewrite system**, upload a file or import a Cop:

```
1 (FUN
2   f : a -> a
3 )
4 (VAR
5   x : a
6 )
7 (RULES
8
9 )
```

property:

timeout:
submit this problem to

More on CoCo's Infrastructure

- talk at IJCAR: July 17, 15:00–15:15, Maths LT2

And the Winners are ...



TRS category

ACP
2

CSI
1

CoLL-Saigawa
3

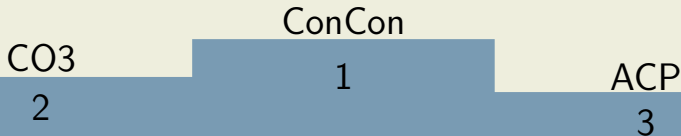
See You Next Year

- TACAS, Prague, April 6–7 2019

And the Winners are ...



CTRS category



See You Next Year

- TACAS, Prague, April 6–7 2019

And the Winners are ...



CPF category

ConCon+CeTA
2

CSI + CeTA
1

ACP+CeTA
3

See You Next Year

- TACAS, Prague, April 6–7 2019

And the Winners are ...



GCR category

FORT
2

AGCP
1

3

See You Next Year

- TACAS, Prague, April 6–7 2019

And the Winners are ...



UN category

CSI
2

ACP
1

FORT
3

See You Next Year

- TACAS, Prague, April 6–7 2019

And the Winners are ...



HRS category

2

1

3

See You Next Year

- TACAS, Prague, April 6–7 2019