FLoC Olympic Games 2014
Citius, Maius, Potentius — Faster, Bigger, More Powerful

Francesco Calimeri  Martin Gebser  Marco Maratea  Francesco Ricca
University of Calabria  Aalto University  University of Genova

Answer Set Programming Competition
The Answer Set Programming Competition 2014 (ASPCOMP’14)

Answer Set Programming (ASP) is a declarative approach to Knowledge Representation and Reasoning.

Wide range of applications from AI, real world and industry (e.g. product configuration, decision support systems, team building).

Strengths:
- expressive representation language for problems up to 2nd PH level
- compact (first-order) encoding of problems
- availability of robust and effective solvers

The number of ASP applications is further increasing

↓

We need even more efficient ASP systems!
Answer Set Programming:
3-colorability problem

ASP program:

- facts representing problem instance, plus
- encoding specifying how a solution looks like

% A graph containing three nodes and three edges
node(1). node(2). node(3).
edge(1,2). edge(2,3). edge(3,1).

% Declaration of three colors

% Each node has some color
color(X,red) | color(X,green) | color(X,blue) :- node(X).

% Neighboring nodes must not share a color
:- edge(X,Y), col(C), color(X,C), color(Y,C).
ASPCOMP’14: Setting

- 28 problem domains taken from past ASPCOMP's (mainly 2013)
- Problem encodings of past events, plus updated encodings
- 16 solvers, either updates of 2013 entries or new, by 3 teams from Aalto University, University of Calabria, and University of Potsdam
- 4 Tracks based on:
  - ASP-Core-2 standard language features, e.g.,
    - “basic” programs, aggregates, choice rules, presence of query
  - problem complexity w.r.t. optimization, Beyond NP problems
- Distinction between single-processor and multi-processor solvers
3rd Prize: WASP ver. 1.5 (University of Calabria)
ASPCOMP’14: Winners

- 2nd Prize: LP2NORMAL2+CLASP
  (Aalto University)

- 3rd Prize: WASP ver. 1.5
  (University of Calabria)
ASPCOMP’14: Winners

- **1st Prize: CLASP**
  (University of Potsdam)

- **2nd Prize: LP2NORMAL2+CLASP**
  (Aalto University)

- **3rd Prize: WASP ver. 1.5**
  (University of Calabria)
ASPCOMP’14: Winners

- 1st Prize: CLASP  
  (University of Potsdam)

- 2nd Prize: LP2NORMAL2+CLASP  
  (Aalto University)

- 3rd Prize: WASP ver. 1.5  
  (University of Calabria)

Thank you, FLoC, ICLP  
Thank you, TK  
Thank you, participants