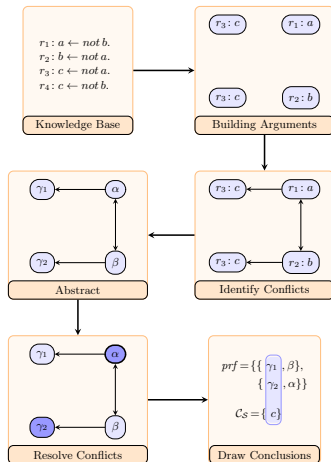


Complexity of Abstract Argumentation Under a Claim-centric View

by Wolfgang Dvořák and Stefan Woltran (TU Wien, Austria)

Abstract argumentation is at the core of reasoning in Instantiation-based Argumentation Frameworks

- ▶ Instantiation-based argumentation frameworks consider the **acceptance of claims** of arguments
- ▶ Existing complexity analysis of abstract argumentation studies the **acceptance of arguments**
- ▶ Argument acceptance is insufficient to decide the acceptance of claims.



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We study **claim-augmented abstract argumentation frameworks** (CAFs), in particular

- ▶ The **complexity of claim-centric reasoning**
- ▶ Approaches towards **tractability**

- ▶ Exploiting Special Graph Classes
- ▶ The number of Claims
- ▶ (Incidence) Tree-width

Complexity of CAFs

σ	$Cred_{\sigma}^{CAF}$	$Skept_{\sigma}^{CAF}$	Ver_{σ}^{CAF}	$NEmpty_{\sigma}^{CAF}$
<i>cf</i>	in P	trivial	NP-c	in P
<i>naive</i>	in P	coNP-c	NP-c	in P
<i>grd</i>	P-c	P-c	P-c	in P
<i>stb</i>	NP-c	coNP-c	NP-c	NP-c
<i>adm</i>	NP-c	trivial	NP-c	NP-c
<i>com</i>	NP-c	P-c	NP-c	NP-c
<i>prf</i>	NP-c	Π_2^P -c	Σ_2^P-c	NP-c

Complexity of well-formed CAFs

σ	$Cred_{\sigma}^{wff}$	$Skept_{\sigma}^{wff}$	Ver_{σ}^{wff}	$NEmpty_{\sigma}^{wff}$
<i>cf</i>	in P	trivial	in P	in P
<i>naive</i>	in P	coNP-c	in P	in P
<i>grd</i>	P-c	P-c	P-c	in P
<i>stb</i>	NP-c	coNP-c	in P	NP-c
<i>adm</i>	NP-c	trivial	in P	NP-c
<i>com</i>	NP-c	P-c	in P	NP-c
<i>prf</i>	NP-c	Π_2^P -c	coNP-c	NP-c

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<i>prf</i>	NP-c	Π_2^P -c	coNP-c	NP-c

See you at the poster!
(Today's Poster Session)