A Drag-and-Drop Proof Tactic

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Disclaimers !

- This is *ongoing* work

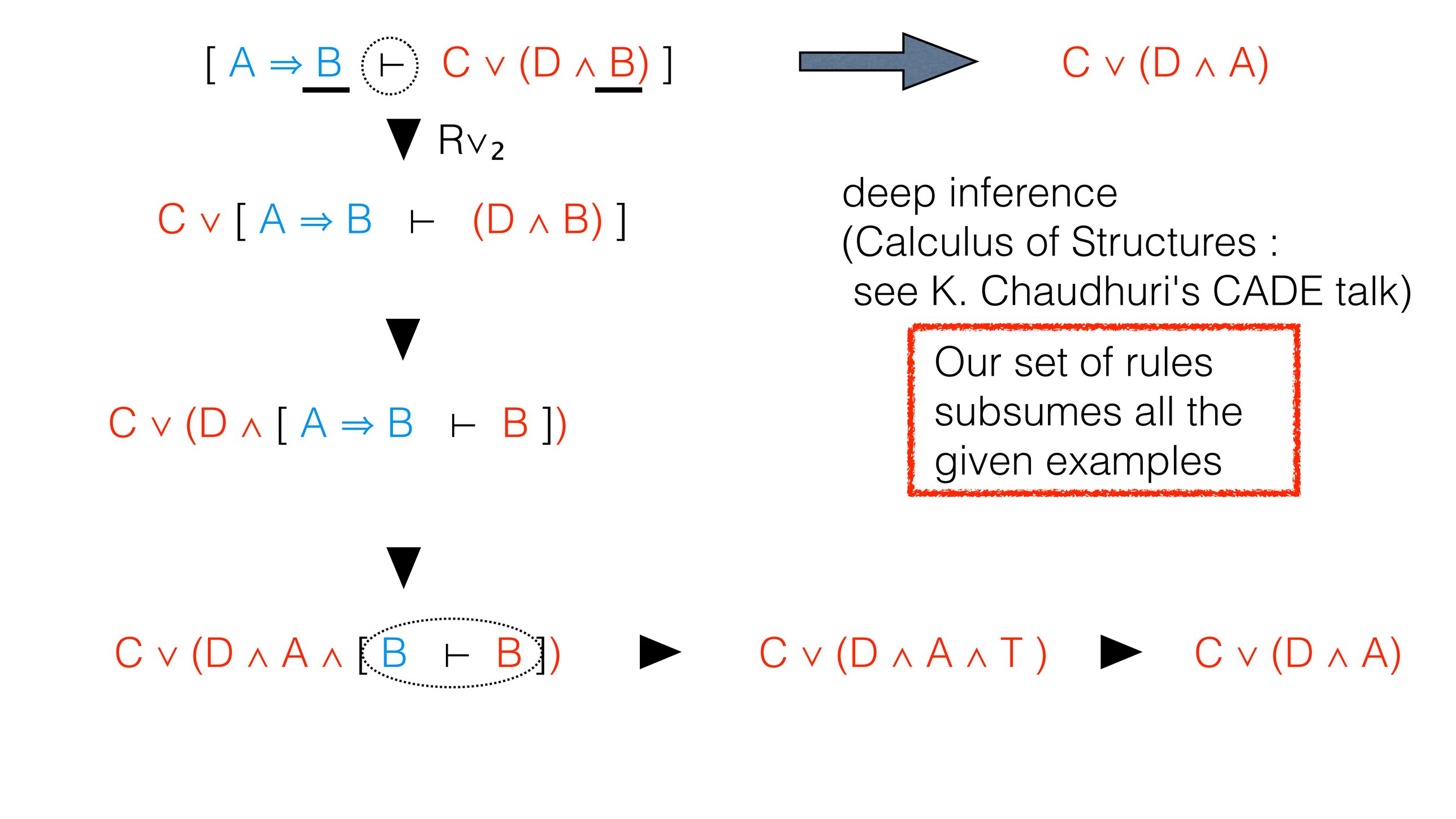
  ⇒ About the *interface*

- Education : prime goal

  (possibly more applications later)

Outline

- Basic idea : in propositional calculus
- The rules
- Quantifiers / predicate calculus



deep inference
(Calculus of Structures :
see K. Chaudhuri's CADE talk)

Our set of rules subsumes all the given examples

Conclusions

`https://prover.dioxygen.io/`

- Prototype : Actema - runs in JavaScript
  Continuation of Proof-by-pointing
- Started as very practical effort, but fruitful links with proof theory

Possible future work

- Scaling up : add on a real theorem prover
- How to deal with lemmas and proof libraries, "Replay proofs"…
- Use of more complex actions (multi-touch…)
- Proof-theoretical properties (which forms of completeness…)
- Extending to classical logic, Higher-Order Logic, Type Theories