

COST Action CA20111

EuroProofNet

Activity report for WG 6 “Type Theory”

Goal of the Working Group

The aim of this WG is to develop a comprehensive theory of type theories, which

1. accounts for its domain-specific variants and the type theories currently used in proof assistants, and
2. allows for the modular reasoning about their syntax and semantics.

More info on the action and the WG on <https://europroofnet.github.io/>.

Activities 2022/23

- Meetings:
 - WG6 Meeting in Vienna, April 2023, Scientific organizers: Jacopo Emmenegger, Paige Randall North
- Short Term Scientific Missions (STSMs)
 - Categorical semantics for propositional dependent type theories, Matteo Spadetto (UK) -> Benno van den Berg (NL)
 - Understanding interpretations of HoTT in elementary (infty,1)-toposes, Morgan Rogers (FR) -> Paige Randall North (NL)
 - Comparing notions of dependent algebraic theory, Peter Lumsdaine (SE) -> Benedikt Ahrens (NL)

Summary Meeting Vienna

- 66 participants
- Ca. 17 funded from EPN
- Budget from EPN: EUR 10,400
- <https://europroofnet.github.io/wg6-vienna/>

Deliverable 4

Definition of a mathematical framework for modular reasoning about type theories and their extensions

- <https://europroofnet.github.io/deliverable4/> under construction

Planned activities for 2023/24

Meeting

- a. Organizers: Andreas Nuyts & Marie Kerjean
- b. Place: KU Leuven, colocated with HoTT/UF 2024
- c. Time: April 2024
- d. EPN Budget: EUR 16,000