



EuroProofNet

Applications of Rewriting Theory in Proof Systems Interoperability

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Course outline

Lecture 1 (Monday 14:00-15:30) **Introduction to proof systems interoperability; introduction to the $\lambda\Pi$ -calculus modulo rewriting** ($\lambda\Pi/\mathcal{R}$) (part 1): λ -calculus, dependent types

Lecture 2 (Tuesday 16:00-17:30), **Introduction to $\lambda\Pi/\mathcal{R}$** (part 2): pure type systems, rewriting; introduction to the **Lambdapi proof assistant, practical session on Lambdapi**
install on your machine Opam (<https://opam.ocaml.org/>)
and Lambdapi (<https://github.com/Deducteam/lambdapi>)

Lecture 3 (Friday 09:00-10:30) **Encoding logics in $\lambda\Pi/\mathcal{R}$** : first-order logic, polymorphism, higher-order logic, pure type systems, ...

Lecture 4 (Saturday 11:00-12:30) **Properties of $\lambda\Pi/\mathcal{R}$** : decidability of type-checking, subject-reduction, confluence, termination, dependencies between these properties