

# The Constructive Coq Repository at Nijmegen

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At the University of Nijmegen, a large formalization of constructive mathematics has been developed in the theorem prover Coq. This formalization contains a library of constructive algebra and analysis, including results like the Fundamental Theorem of Algebra and the Fundamental Theorem of Calculus as well as the definition and basic properties of the elementary transcendental functions.

In this talk we will present this library. We will start by discussing why formalizing mathematics is relevant, and then give an overview of the structure and contents of the library together with the methodology that is used to ensure that it remains consistent and that it can be used by other people.

Finally some applications will be considered, with emphasis on program extraction. This will include a motivation of program extraction and presentation of what has been done within the framework of the Constructive Coq Repository at Nijmegen.