

1116-68-2342

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*Theorema: A Tool for Formalizing Mathematics.*

Formalization of some pieces of mathematics can now be done in a user-friendly “natural” style that is both easy to read for humans **and** can be processed by automated reasoners.

Currently, due to the worldwide research effort of the past three decades, there are about twenty software systems for automated reasoning available. For illustration, in this talk, we give some examples of formalization and proof generation in our Theorema system.

We also discuss questions such as, for example:

- What is the difference between writing mathematical formulae in  $\text{\LaTeX}$  and formalization within an automated reasoning system?

- In what ways do formal math knowledge bases go beyond web-accessible down-loadable paper collections (which are quite common by now in most sciences)?

- What is the relationship between the current mathematical software systems (algorithm libraries) like Mathematica etc. and future automated reasoning systems?

- What can be expected from future formal mathematical knowledge bases for math research, math teaching, math application, math archiving and the quality control of mathematical publications?

- Does one have to stick to a particular logical foundation in order to build and use formal math knowledge bases? (Received September 22, 2015)