JAR: Your manuscript entitled Automating Free Logic in HOL, with an Experimental Application in Category Theory

Christoph Weidenbach <em@editorialmanager.com> Fri, Nov 23, 2018 at 9:33 AM
Reply-To: Christoph Weidenbach <weidenbach@mpi-inf.mpg.de>
To: "Christoph E. Benzmüller" <c.benzmueller@fu-berlin.de>

CC: "Dana S. Scott" scott@cs.cmu.edu

Ref.: Ms. No. JARS-D-18-00082
Automating Free Logic in HOL, with an Experimental Application in Category Theory
Journal of Automated Reasoning

Dear Dr. Benzmüller,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below.

If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript. Please make sure to submit your editable source files (i. e. Word, TeX).

Your revision is due by 22 May 2019.

To submit a revision, go to https://jars.editorialmanager.com/ and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely

Christoph Weidenbach
Associate Editor
Journal of Automated Reasoning

PS: your reviewer has actually replayed all your proofs in Isabelle; two proofs do not go through with the actual replaying setting, but with CVC4 (your paper); the reviewer has massaged these two proofs until they also go through; so your results can now be trusted at the usual Isabelle level; maybe this is worth an acknowledgement

Reviewers' comments:

Reviewer #1: I am happy with all changes, except for:

> For quite some time the use of the \textsc{smt}
> method has been controversially discussed in the Isabelle/HOL
> community. However, since about a year, the \textsc{smt} method is
> now even eligible in submissions to the Archive of Formal
> Proofs.

Not really : Setting the solver to CVC4 means that the proof are accepted without replaying them, effectively bypassing the Isabelle kernel. This means that you are currently trusting the translation and the SMT solver CVC4. The smt method when used with z3 does not have this issue, as Isabelle is able to replay the proofs. Remark that since Isabelle2018, 'smt_oracle' must be explicitly written in the theory.

I am fine with trusting SMT solvers, as long as it is acknowledged in the paper.

If this point is addressed, I am fine with accepting the paper.

Some additional typos:
Def 2: D × . . . × D ~> \dotsb

Section 4: " (cf. Fig.2)." add space "Fig. 2"
Section 4.2: Table~1 to avoid the odd line break between the table and the number
Section 4.4: "in Isabelle." ([15, p. 5]).10 For quite some time": extra space

Sect 5. "we show, that their axiom set": no comma needed

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