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Comments for the Author:

This is an interesting and important paper. I would be very happy to have something like this in the literature as something to point to as justification for my own work. The commercial software perspective is particularly valuable as an alternative to the academic view (that Risch does it all). Also, many people, e.g. Jacques Carette, have been saying informally for years that indefinite integration is a game for academics, but definite integration is the really hard problem and where all the bugs lie. It would be good to have this in print.

However, the paper is too much a straight conversion of the slides of a talk into a printed format. I have annotated the PDF with numerous comments. I hope that Daniel will have the time, and patience, to rework the material into a form of lasting value to us all. The CCA readers will have a good level of competence for the technical details, and so each example could be enlarged to include a technical comment.

Let me take a specific example. The paper contains the example of integrating  
 $(7x^{13}+10x^8+4x^7-7x^6-4x^3-4x^2+3x+3)/(x^{14}-2x^8-2x^7-2x^4-4x^3-x^2+2x+1)$

This is integrated once by Mma without intervention and once after an Expand.

The first result is 2 lines, the second 1.5 pages.

The example is then dropped and the next example taken up.

We are left wondering what just happened.

We can take the time to discover that the denominator splits into two factors

of degree 7 (using an extension of  $\sqrt{2}$ ) and then the integral becomes

$f'/f + g'/g$ , which integrates to two logs (which can be combined as it happens).

It would be nice if the explanation were included in the paper.

It only takes 2 lines.

Next, the example does not need to be so large to make the point.

Once the trick is uncovered, it is easy to produce a shorter example.

For example  $(6x^5+x^4-14x^3-17x^2+3)/(x^6-4x^4-6x^3-x^2+2x+1)$  shows exactly the same behaviour, but the numerator contains 5 terms compared with 8 before.

Therefore the output after the Expand will probably be confined to 1 page,

rather than 1.5 pages.

That will be quite enough to convince the reader, while saving a few trees.

I hope these comments plus the annotated file will be enough for Daniel to re-submit an even better version soon.

I hope he does not take as long as I did to file this review. Sorry Daniel.

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