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Examining the use of computer algebra systems in university-level mathematics teaching.

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Summary: The use of Computer Algebra Systems (CAS) is becoming increasingly important and widespread in mathematics research and teaching. In this article, I will report on a questionnaire study enquiring about mathematicians' use of CAS in mathematics teaching in three countries; the United States, the United Kingdom, and Hungary. Based on the responses from 1,100 mathematicians, I will give an overview of the current extent of CAS use in universities and offer some examples of mathematicians' classroom use of CAS. I will particularly focus on responses from participants who reported employing CAS in their teaching practice. In addition, I attempt to explain the reasons behind these practices and highlight the importance of further research on university-level mathematics education. Accordingly, I will pinpoint possible research directions in this field that could further assist in the successful integration of CAS both by mathematicians and mathematics departments.

Classification: D35 U55

Keywords: computer algebra; mathematics and computers; surveys; educational research; comparative studies