

# **Innovative CAS Technology Use in University Mathematics Teaching and Assessment: Findings from a Case Study in Alberta, Canada**

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In this presentation, I will discuss a recent journal publication [1] in which we report on a case study that focused on innovative uses of CAS technology in university mathematics teaching and assessment. The research study involved a site visit to the University of Alberta campus during which: interviews were conducted with five mathematics faculty members and seven mathematics students; math lectures were attended; and artifacts were collected such as course outlines, software demonstrations, and assessment tools. Interviews were transcribed and the data entered into Atlas.ti qualitative research software for the purpose of thematic analysis. Findings center around the innovative use of the open source software known as SageMath, both in the teaching (answer checking, interactive lecture demonstrations) and assessment (assignments, mid-terms, final examinations) practices of one particular instructor who taught seven iterations of a Mathematical Programming and Optimization undergraduate course.

## **Keywords**

mathematics education, technology, Computer Algebra Systems (CAS), teaching, assessment

## **References**

- [1] D. H. JARVIS, C. BUTEAU, C. DORAN AND A. NOVOSELTSEV, Innovative CAS technology use in university mathematics teaching and assessment: Findings from a case study in Alberta, Canada. *Journal of Computers in Mathematics and Science Teaching*, **37**(4), 309–354 (2018).