

When Mathematics Meet Computer Software

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TI-Nspire CAS, from Texas Instruments, is the current computer algebra system used for both undergraduate level mathematics and science courses at ÉTS. While not as powerful as Maple or Mathematica, it offers some advantages over its competitors, mainly being multi-platform (calculator and computer) and easy to use. However, the lack of some useful functions becomes obvious when someone wants to perform higher mathematical development. A fruitful collaboration between the authors has produced interesting developments regarding the integration of piecewise functions [1] and the convolution of signals [2]. This talk will focus on our latest additions to the TI-Nspire system, namely automating the series solution for first and second order ODEs.

References

- [1] Michel Beaudin, Frédérick Henri, Geneviève Savard. Integration of Piecewise Continuous Functions. The Derive Newsletter 91 (2013) 3–21. <http://www.austromath.at/dug/dnl91.pdf>
- [2] Michel Beaudin. https://cours.etsmtl.ca/seg/mbeaudin/Liste_WEB.pdf