The FunctionAdvisor: extending information on mathematical functions with computer algebra algorithms

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A shift in paradigm is happening, from: encoding information into a database, to: encoding essential blocks of information *together with algorithms* within a computer algebra system; so that the information is not only searchable but can also be recreated in many different ways, as well as actually used to compute. This talk focuses on this shift in paradigm over a real case example: the digitizing of information regarding mathematical functions as *the FunctionAdvisor* project of the Maple computer algebra system. Examples of algorithms at work, for differential polynomial representations, nth order symbolic differentiation, and computation of branch cuts of arbitrary algebraic expressions, as well as a network of relations between mathematical functions, all this extending the information typically found in textbooks like Abramowitz and Stegun, are shown.

References

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