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Faster polynomial arithmetic over algebraic number and function fields in Maple 11

In Maple, the command *evala* is used to evaluate expressions in an algebraic number (or function) field. When conditions are appropriate, evala relies on *recden*, a Maple library designed to work with dense polynomials efficiently. The recden library was developed by M. Monagan and his group at Simon Fraser University.

For Maple 11, the core routines of the recden library were converted to internal kernel routines. In this talk, we will give an overview of how these new routines are implemented, as well, we will discuss the performance benefits they provide over the pure library implementation.