

# Faster symbolic integration in D-modules

The problem of symbolic integration of holonomic functions consists in computing LDEs satisfied by a given integral. There exists two families of algorithms to solve this problem. The first and fastest one is commonly referred to as the family of creative telescoping algorithms. The second one contains variants of Takayama's algorithms and work in D-modules. Although not as efficient as creative telescoping algorithms, they turn out to be more expressive.

My talk will present new algorithms to speed up symbolic integration in D-modules. This includes a new variant of Takayama's algorithm and a new algorithm to compute annihilators via saturation.