1026-08-89 **Franz Winkler*** (`Franz.Winkler@jku.at`), RISC, J. Kepler Universitaet, A-4040 Linz, Austria.
Gröbner bases in difference-differential modules and their applications.

Recently we have introduced a construction of Gröbner bases for difference-differential (d-d) modules, based on a new concept of generalized term ordering for exponent vectors over the integers. We further investigate the key concept of S-polynomial for such difference-differential bases. We also apply the method to compute the difference-differential dimension polynomial of a d-d module and of a system of linear partial difference-differential equations. This is joint work with M. Zhou of Beihang University in Beijing. (Received February 16, 2007)