1124-39-388   **Andrew Arnold*** (`a.arnold256@gmail.com`) and **Erich Kaltofen**. *Applications of the Berlekamp–Massey–Sakata algorithm to multivariate sparse polynomial interpolation.*

The Berlekamp–Massey–Sakata (BMS) algorithm produces a Groebner basis for an ideal of linear generators for an infinite array of field elements. It is the multidimensional generalization of the Berlekamp–Massey algorithm for sequences. We give termination conditions for the BMS algorithm in the case of positive-dimensional ideals. Moreover, we apply the BMS algorithm to Las Vegas and deterministic sparse multivariate polynomial interpolation. (Received September 13, 2016)