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The higher transvectants are redundant

Transvectants were discovered in the nineteenth century by the German school of classical invariant theorists. In modern terminology, they encode the decomposition of the tensor product of two SL_2 -representations. Given binary forms A and B of orders d, e respectively, their r -th transvectant $T_r = (A, B)_r$ is a form of order $d + e - 2r$ whose coefficients are bilinear in those of A, B . We classify all quadratic syzygies in the T_r , and show that as a consequence, the higher transvectants $\{T_r\}_{r \geq 2}$ can be entirely recovered from T_0, T_1 .

This is joint work with A. Abdesselam from Université Paris XIII.