Interpolation in modules over simple rings

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We investigate a concept of "polynomial completeness" that was introduced by P. Idziak and K. Słomczyńska. They have called an algebra *polynomially rich* if each function that preserves congruences and the types of prime quotients of the congruence lattice in the sense of Tame Congruence Theory is a polynomial function. On an expanded group, a function preserves types if and only if it preserves certain 4-ary relations. Hence, one can define when a partial function preserves types. We call an expanded group *strictly k-polynomially rich* if each k-ary partial type preserving function is polynomial. In order to give a characterizaton of finite strictly k-polynomially rich expanded groups, it is important to characterize strictly k-polynomially rich modules over simple rings. The contribution of the present talk is such a characterization.