GROUP ALGEBRAS, CODES AND GENER-ALIZATIONS

C. POLCINO MILIES [1], ANDRÉ L. PEREIRA[2]

[1] UNIVERSIDADE DE SÃO PAULO

[2] UNIVERSIDADE FEDERAL RURAL DO RIO DE JANEIRO

Error Correcting Codes were introduced by R. Hamming and C. Shannon in 1947 and 1948 respectively, mainly in the context of linear codes over finite fields. In 1957, E. Prange introduced cyclic codes, that can be realized as ideals in a factor ring of polynomials and also as ideals in the group algebra of a cyclic group. Since then, many generalizations of group codes have been considered, using Abelian, Metabelian, Dihedral or Nilpotent groups.

Cylic codes have been extended in other directions, introducing negacyclic, constacyclic, skew codes, etc, which can be realized as ideals in factor rings of generalizations of polynomial rings, and also as ideals in structures that extend the concept of group algebra. In our talk we shall survey these extension and mention some recent results.