On pseudocyclic association schemes

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Abstract

The notion of a pseudocyclic association scheme is generalized to the non-commutative case. It is proved that any pseudocyclic scheme the rank of which is much more than the valency is the scheme of a Frobenius group and is uniquely determined up to isomorphism by its intersection number array. An immediate corollary of this result is that any scheme of prime degree, valency k and rank at least k^4 is schurian.

Keywords: Association schemes, Pseudocyclic schemes, Frobenius groups.

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O psevdocikličnih asociativnih shemah

Povzetek

V članku posplošimo pojem psevdocikličnih asociativnih shem na nekomutativen primer. Dokažemo, da je poljubna psevdociklična shema z rangom, veliko večjim od njene valence, shema Frobeniusove grupe, in da je do izomorfizma natančno enolično določena z njenimi presečnimi števili. Neposredna posledica tega rezultata je, da je poljubna shema praštevilske stopnje, valence k in ranga vsaj k^4, Schurova.

Ključne besede: Asociativne sheme, psevdociklične sheme, Frobeniusove grupe.