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ON DISJOINT SYSTEMS OF RESIDUE
CLASSES OR COSETS OF SUBGROUPS

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Abstract

A finite system $A = \{a_1 \pmod{n_1}, \ldots, a_k \pmod{n_k}\}$ of residue classes is said to be disjoint if the k residue classes in it are pairwise disjoint. A fascinating and difficult topic is to investigate the moduli in a disjoint system; in this field several interesting conjectures remain open. We will also talk about disjoint covers of the integers by residue classes, and recent progress on the Herzog-Schönheim conjecture concerning disjoint covers of a group G by finitely many left cosets $a_1 G_1, \ldots, a_k G_k$.