

1023-20-219

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3399 North Road, Poughkeepsie, NY 12601. *Using Formations to Determine
Factorizations.* Preliminary report.

A finite group G admits a *proper factorization* if there are proper subgroups A and B of G such that $G = AB$. It can be a daunting task to determine if a finite group G admits a proper factorization and whether a specific proper subgroup A of G is part of a proper factorization for G . One way to address this issue is to use the formation $\mathfrak{a}\mathfrak{S}$ of finite aS -groups (a group G is an aS -group if it has order 1 or if every nontrivial subgroup has a proper supplement). This talk will discuss ways in which the $\mathfrak{a}\mathfrak{S}$ -residual $G^{\mathfrak{a}\mathfrak{S}}$ for a finite group G can be used to obtain factorization properties for G . (Received August 25, 2006)