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**Paul-Hermann Zieschang\*** (zieschang@utb.edu), Department of Mathematics, University of Texas at Brownsville, Brownsville, TX 78520. *On association schemes with thin thin residue.*

Let  $S$  be an association scheme. The smallest closed subset of  $S$  with thin quotient scheme is called the thin residue of  $S$  and is denoted by  $O^\theta(S)$ ; cf. [2]. We shall look at schemes the thin residue of which is thin. If  $O^\theta(S)$  is thin,  $O^\theta(S)$  can be viewed as a group. In [1] it was shown that  $S$  is schurian if the set of all normal subgroups of  $O^\theta(S)$  is linearly ordered. As a consequence, one obtains that  $S$  is schurian if  $O^\theta(S)$  is a finite simple group. In [3], it is shown that  $S$  is schurian if  $O^\theta(S)$  the direct product of two simple groups of different order. In my talk, I will discuss the main idea of the proof of this latter result. The emphasis will be on ideas how to generalize this result.

[1] Hirasaka, M. and Zieschang, P.-H.: Sufficient conditions for a scheme to originate from a group, *J. Combin. Theory Ser. A* **104**, 17-27 (2003)

[2] Zieschang, P.-H.: *Theory of Association Schemes*. Springer Monographs in Mathematics, Berlin Heidelberg New York (2005)

[3] Zieschang, P.-H.: On association schemes with thin thin residue, *J. Algebra*, to appear (Received February 22, 2009)