1030-20-167   **J. D. H. Smith*** (`jdhsmith@math.iastate.edu`) and **K. W. Johnson**. *Association schemes from simple Bol loops.*

S.Y. Song's thesis investigated association schemes obtained from simple nonassociative Moufang loops, the smallest of which has order 120. At the next step from associativity lies the left Bol identity. Until recent work of G. Nagy, the question of the existence of finite simple non-Moufang Bol loops had remained completely open. We discuss various aspects of the broadest class of simple finite Bol loops, including construction techniques and related association schemes. In particular, we examine simple non-Moufang Bol loops of orders 24 and 120. (Received July 31, 2007)