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Young Ju Lee* (leeyoung@math.rutgers.edu), Department of Mathematics, Rutgers, The State University of New Jersey, Hill Center 238, Busch Campus, Piscataway, NJ 08854. *Fast and Robust Multigrid method for Stokes-like equations.*

We present the construction and justification of the robust and efficient multigrid method for the solution to the Stokes-like equations when they are discretized by the conforming finite elements. Two pairs of mixed finite element spaces will be discussed, the Scott-Vogelius elements analyzed in RAIRO, (1985) and Austin, Mantueffel and McCormick elements introduced in NLAA (2004). In particular, our analysis resolves the open question posed by Austin, Manteuffel and McCormick in 2004 on the theoretical analysis for their numerical experiments. (Received February 12, 2008)