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Xinyun Zhu*, Department of Mathematics, UTPB, Odessa, TX 79762. *A variant of relaxed triangular splitting preconditioners for generalized saddle point problems from Navier–Stokes Equations.* Preliminary report.

Based on the dimensional split preconditioner, in this paper, a variant of relaxed triangular splitting preconditioner (VRTS) is presented and discussed, in which a simple and feasible way is designed for the selection of the parameters. Spectral properties of the VRTS preconditioned matrix are analyzed in detail. Theoretical analysis shows that when applying the VRTS preconditioner within a Krylov subspace method, the less computational cost is required at each iteration than some state-of-the-art approaches. Finally, some numerical experiments arising from the discretization of Navier–Stokes equations are given to illustrate and validate the efficiency and robustness of the presented preconditioners with using GMRES($\#$) as an iterative solver. (Received August 12, 2019)