Julien LANGOU Block MGS orthogonalization.

University of Colorado Denver julien.langou@cudenver.edu

We combine two ideas. First some new 'tall-skinny' algorithms have been rediscovered, they enable to orthogonalize a block of vectors very efficiently. Those algorithms are latency-tolerant. We consider the MGS variant of those algorithms. Second, we apply the same blocking as for Householder reflection for MGS, this idea is presented in Bjorck, 1997. These two ideas combined together give an efficient orthogonalization scheme for eigensolvers and block iterative methods. We note that blocking in MGS is worthwhile to be considered in the case of GMRES.