1129-65-228 **Erin Claire Carson*** (erin.carson@nyu.edu). *Communication-Avoiding Krylov Subspace Methods.*

Solvers for sparse linear algebra problems, ubiquitous throughout scientific codes, often limit application performance due to a low computation/communication ratio. In this talk, we present work in the development of parallel communication-avoiding Krylov subspace methods, which can yield performance improvements in a wide variety of scientific applications. Focusing on the conjugate gradient method, we discuss convergence and stability properties in finite precision as well as tradeoffs between performance and accuracy that arise due to both machine parameters and the numerical properties of the problem. We conclude with recommendations on when we expect communication-avoiding variants to be beneficial in practice. (Received March 16, 2017)