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Simon J Tavener* (simon.tavener@colostate.edu), 117 Statistics Building, Colorado State University, Fort Collins, CO 80523-1801, and **Varis Carey, Donald Estep, Victor Ginting** and **David Kay**. *Estimating and controlling “communication” errors in multiphysics problems.*

Multiphysics problems by their very nature involve the communication or transfer of information between distinct physical processes, domains or time scales. This communication necessarily results in the transfer of numerical (and modeling) error between different physical processes, domains or time scales, which must be estimated and controlled as part of a successful computation. We develop adjoint-based *a posteriori* error techniques to estimate the error in a quantity of interest and implement refinement strategies to reduce these three very different types of “communication” error. (Received September 02, 2018)