1146-65-432   **James V Lambers*** (`james.lambers@usm.edu`), 118 College Drive #5043, Hattiesburg, MS 39406. *Matrices, Moments, Quadrature and PDEs.*

Krylov subspace spectral (KSS) methods are high-order accurate, explicit time-stepping methods with stability characteristic of implicit methods. This "best-of-both-worlds" compromise is achieved by computing each Fourier coefficient of the solution using an individualized approximation, based on techniques from "matrices, moments and quadrature' due to Golub and Meurant for computing bilinear forms involving matrix functions. This talk will present an overview of their derivation and essential properties, and also highlight ongoing projects aimed at enhancing their performance and applicability. (Received January 28, 2019)