1093-65-228   **Vladimir Druskin***, druskin1@slb.com, and **Rob Remis** and **Mikhail Zaslavsky**. *Matrix Functions and Their Krylov Approximations for Wave Propagation in Unbounded Domains.*

Solution of wave problems in unbounded domains requires computation of the exponential of the spatial PDE operator with continuous spectrum. To avoid spurious resonances, the reduced order model should preserve spectral continuity of the original problem. The authors introduce so-called stability-corrected time-domain exponential (SCTDE) of dumped discretization matrix possessing this conservation property. However, convergence of the Krylov subspace approximation of the SCTDE matrix function decelerates due to appearance of the square root singularity. We improve convergence by employing extended Krylov subspace. (Received August 15, 2013)