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Aleksandr Smirnov* (asmirn1@tigers.lsu.edu), 4110 Janet Ave, Apt 2, Baton Rouge, LA 70808. *Applications of the partial Wiener-Hopf factorization in Dynamic Fracture Mechanics.*

The Wiener–Hopf technique is a powerful tool for constructing analytic solutions for a wide range of problems in physics and engineering. The key step in its application is factorization of a kernel into a product of two functions (matrices) which have different regions of analyticity. However, a closed-form factorization is known to be constructed only for a small class of the Chebotarev–Khrapkov matrices. In the talk, the technique of the partial Wiener–Hopf factorization is presented, that helps to overcome difficulties of the Wiener–Hopf matrix factorization, while combining advantages of analytic closed-form solutions in dealing with singularities and wide applicability of numerical methods. Their applications to the problems of Dynamic Fracture Mechanics are discussed. (Received September 09, 2015)