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Kailash C. Patidar* (kpatidar@uwc.ac.za), Department of Math. and Appl. Mathematics,
University of the Western Cape, Private Bag X17, Bellville, 7535, South Africa. *NSFDMs as
FOFDMs for robust simulation of parameter sensitive partial differential equations.*

In this talk, we will discuss some classical approaches for designing exponentially fitted methods to solve parameter sensitive ordinary differential equations, in particular, those which are singularly perturbed, and their limitations when one needs to extend them to solve systems of such equations as well as singularly perturbed partial differential equations. Noting the importance of the uniform convergence of the fitted methods, for which they are very popular in this research community, we will then discuss how certain issues are effectively resolved in our recent work and what are the problems that may be tackled further using the approaches that are based on NSFD philosophy. (Received May 27, 2016)