Sk. Safique Ahmad* (safique@iiti.ac.in), Indian Institute of Technology Indore, Simrol, Khandwa Road, Indore, 453552, India. Perturbation analysis for palindromic and anti palindromic nonlinear eigenvalue problems. Preliminary report.

Structured backward error analysis of an approximate eigenpair of structured nonlinear matrix equations are derived with structures T-palindromic, H-palindromic, T-antipalindromic, H-antipalindromic. We construct a minimal structured perturbation such that an approximate eigenpair becomes an exact eigenpair of an appropriately perturbed nonlinear matrix equation. Moreover, we show that our general framework generalizes the existing results in the literature on perturbation theory of a matrix polynomial. (Received July 20, 2017)