Dear Editor,

Thank you very much for the review of our manuscript "Geometrically nonlinear flexural analysis of multilayered composite plate using polynomial and non-polynomial shear deformation theories".

We sincerely appreciate all valuable comments and suggestions, which helped us to improve the quality of the article. Our responses to the reviewer's comments are described below in a point-to-point manner. Appropriated changes, suggested by the reviewers, has been introduced to the manuscript (highlighted within the manuscript).

We hope that our manuscript will be acceptable for publication in Aerospace Science and Technology.

Yours sincerely,

Babu Ranjan Thakur

corresponding author

Reviewer #1: No comments

Reviewer #2:

Query 2— authors are mentioning [71, 72] for their patch recovery. However, such procedure which was demonstrated to be super-convergent has been applied to Poisson-type equations. The procedure has not been proven to be super-convergent for plates which unlikely it would be. It is suggested to report the algebraic equations used by the authors to carry out post-processing of stresses.

Reply : As per the reviewer's suggestion, a dedicated subsection 3.3 named as stress-recovery technique over the surface has been added in the updated manuscript and the same has been highlighted with magenta color. In this subsection, a detailed procedure with various illustrations along with algebraic equations has been shown in a comprehensive manner. To avoid the repetition in section 4.3, the lines corresponding to stress recovery are modified and changes are highlighted with magenta color.

Query 3— what stated is not completely true, since 3D equilibrium should be always valid both in linear and non-linear regimes. Thus, since the present approach considers an engineering theory and not a 3D elastic solution the correct and real shear components of stress can be obtained only via recovery processes which have been proven in the literature to work in this context such as

-- https://doi.org/10.1002/(SICI)1097-0207(19990410)44:10<1481::AID-NME554>3.0.CO;2-Q

-- https://doi.org/10.1080/15376494.2015.1121521

-- https://doi.org/10.1016/j.compstruct.2020.112675

-- https://doi.org/10.1016/j.compositesb.2017.06.012

Reply : We would like to thank you for the comments and pointing out our mistake of not clearly stating out about the constitutive approach used for calculating the transverse stresses.

Yes, the 3D equilibrium approach is valid for both linear and non-linear regimes. Further, the correct and real shear components of transverse stresses can be obtained only via recovery processes due to the variation of plies in the thickness direction. Hence, it is important to use stress recovery technique in thickness direction using 3D equilibrium approach and the same conclusion regarding the transverse stresses is drawn in the conclusion section and highlighted with magenta color.

Furthermore, in the present study, no recovery technique has been considered in thickness direction to show the limitation of constitutive approach for Green-Lagrange strain. The stress recovery technique shown in section 3.3 (in the updated manuscript) is only for inplane distribution of stresses which is required due to the usage of C^0 Lagrange interpolation function. Moreover,

the continuous through-thickness transverse stresses can be obtained by constitutive and 3D equilibrium approaches. Even though, the 3D equilibrium approach is an appropriate approach for calculating the continuous transverse stresses, the constitutive approach also gives reasonable values for HSDTs. Thus, for the constitutive approach, it is observed that the zero transverse stresses condition is satisfied through the linear strain-displacement relation. Moreover, this condition is also satisfied in von Kármán nonlinear model as well as linear model due to absence of nonlinear transverse strain-displacement terms. However, due to the presence of nonlinear transverse strain terms in the Green-Lagrange nonlinear model, zero transverse stresses condition using constitutive approach is not satisfied at the top and bottom boundary condition. Hence, for accurate predication of transverse stresses, the only choice left is the 3D equilibrium approach in the laminated and sandwich plates.

In the updated manuscript, the above stated explanation is clearly written in the section 4.3.8 and same is highlighted with magenta color.

We would like to thank reviewers for taking the time and effort necessary to review the manuscript. We sincerely appreciate all valuable comments and suggestions, which helped us to improve the quality of the manuscript.