Overall Conclusion

In the present work, we investigate certain semi-analytic techniques like Fractinal Residual Power Series Method (FRPSM), Homotopy Perturbation Sawi Transform Method (HPSTM), Adomian Decomposition Shehu Transform Method (ADShTM), and Homotopy Perturbation General Transform Method (HPGTM). Demonstration to solve linear and nonlinear ordinary and partial fractional differential equations have successfully been achieved by employing some of the very sophisticated methods showing their applicability, reliability and effectiveness, and thus uncovering the aesthetic beautiful nature of mathematics. In order to achieve the approximate solution in series form, we need to examine the convergence and error approximation related to technique which is under consideration; and we did this exercise in all the techniques, we explored. Semi-analytical methods can be viewed as a good refinement of the existing analytical methods and are become more popular due to its ease of computation and obtaining the solution in series form, with the successful observation of having obtained enough close approximate solution as compared to exact/analytic solution.