Second round of review:

General comments:
The authors have significantly improved the manuscript and addressed most of the reviewers' comments. However, the scientific significance of the work and novelty compared to other DG dycores, in my opinion, remain the weak points of this paper.

Specific comments:
The authors have acknowledged and cited previous studies in their revised manuscript's Introduction and listed what they believe are their unique contributions (lines 92-116) in three key points. However, none of the three points is a real breakthrough. They mentioned other studies who have followed the same approaches before, without really emphasizing why their proposed approach should be better.

Also, it would be nice if the authors mentioned which configuration in terms of numerical settings and choice of dissipation mechanisms they plan to use in the final "operational" version of SCALE-DG, even if subject to change in the future.

Technical comments:
Line 100: Change “For introducing the turbulent model” with “To introduce the turbulent model”