Breaking the boundary between "dynamics" and traditional "physical parameterizations" – A gray-zone dynamics with SGO?

- The traditional separation between the "dynamical core" and "column physics" maybe limiting innovation on both fronts
- Seamless modeling may require seamless development between the "dynamics" and "physics"
- The low hanging fruits are the better treatment of Sub-Grid Orography (SGO) for 3D mountain waves breaking (gravity-wave drag) and mountain blocking within the "dynamics"
- Cloud microphysics and PBL can be further advanced if SGO effects are included
- A new dynamics (nu-FV3) is under development that treats, explicitly and more precisely, SGO processes.