EAMv2 tuning

- **EAMv1P configuration (by Po-Lun Ma)**


  - Code modification
    1. components/cam/src/control/camsrfexch.F90 (gustiness)
    2. components/cam/src/physics/cam/clubb_intr.F90 (gustiness, tpert, theta_v)
  - CLUBB (21), ZM (6), MG2 (5) and aerosol (3) tuning parameters
  - Post-v1 bug fixes (RRTMG, MG2)

- **F20TRC5-CMIP6_A01 simulations**


  - A01_v1P
  - A01_v1P_clubb (CLUBB tuning parameters, 2X10yr)
  - A01_v1P_zm (ZM tuning parameters, 10yr)
  - A01_v1P_mic (MG2 and related parameters, 10yr)

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Improved model performance

- Double ITCZ bias in the eastern Pacific
- The precipitation bias over Amazon, and Andes
- Marine stratocumulus and trade-wind cumulus clouds
- Surface temperature bias over NH mid- and high-latitude land
- Surface wind stress and so on (not shown here)
Future plan

• Analyze the 10-year experiment with mainly CLUBB tunable parameters to have a new baseline coupled simulation (partially v1P + tri-grid + CLUBBv2 related tunable parameters)
• Further tune the parameters to improve model performance.
• Evaluate aerosol-cloud interactions and cloud feedbacks