Comment on egusphere-2022-89
Anonymous Referee #1

Referee comment on "ENSO predictability changes in an equilibrium warmer climate in LongRunMIP models" by Yiyu Zheng et al., EGUsphere, https://doi.org/10.5194/egusphere-2022-89-RC1, 2022

The study titled "Insignificant but robust decrease of ENSO predictability in an equilibrium warmer climate" investigates ENSO characteristics and predictability in a warmer climate. It is a novel work which furthers the understanding of ENSO predictability in the future. It can be accepted after the following comments are addressed:

Line 55: The authors should explain LongRunMIP in detail.

Line 250: The authors claim that "ENSO mean characteristics significantly change in a warmer climate.". Can the authors verify this with the paleoclimate research on ENSO when the Earth’s temperature was warmer than the present day? Support from proxy records would justify the analysis considering the biases in the models.

The authors discuss about the ENSO predictability, however, there is no mention of forcings which can make the ENSO more predictable such as volcanoes. Recent studies such as Khodri et al 2017, Singh et al 2020 etc have shown that strong volcanic eruptions can trigger El Niños.