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Atmospheric Chemistry and Physics Discussions

Interactive comment on "On the role of the south Pacific subtropical high at the onset of El Niño events" *by* Youjia Zou and Xiangying Xi

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Dear colleague, I'm very delighted to provide some explanations for your comments: 1. SOI and NINO3.4 SST index both are indices of ENSO. Traditional thoughts consider that a southward shift of the SPSH is a result of the Ei NINO envents, but we think it is a possible diver of Ei NiNO events. This is the substantial difference.

2. Based on the comments of Anonymous Referee #1, the eastward current along the equator during Ei Nino events is a reversed SEC. If it were true, it should have two branches of the eastward currents, one (ECC) along 5-8 Latitudes, the other along the equator, inconsistent with the satellite observations.

3. it is well known that the broad (in meridional extent) westward SEC is induced by the

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easterly winds. To reverse the westward SEC from westward to eastward needs long-term, steady and persistent westerly winds. The sporadic, short-duration and weak westerly winds observed during Ei Nino events is considered insufficient.

4. If the eastward current along the equator during EiNino envents were induced by the unbalanced zonal pressure gradient (the westerly winds), the relatively narrow eastward currernt (in meridional extent) along the equator could not be explained by the broad westerly winds observed in south of the equator.

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