Summary of first telecom (March 28 2012)

1. **Nomenclature.** There was some confusion about the meaning of “flavors”. For some of us, “flavors” indicate distinct phenomena, as opposed to continuum, while for others “flavors” are just different manifestations of the same phenomenon (like different flavors of ice cream). For example, we may have enhanced warming at different longitudes, but the underlying mechanisms are the same. *For ease of discussion, we should establish a nomenclature that we all agree upon.* Also, one important question is: When we talk about different flavors, or different phenomena, what do we mean? What would make different events be different phenomena? Their underlying dynamical processes, evolutions, precursors, predictability, impacts? Is it enough to find that there is no bimodality in the longitude of the SST anomalies to rule out the existence of distinct phenomena? Like with the normal modes of a linear system, we could find any combination of them, but they exist as distinct modes. Similarly, two different types of warming (and cooling) emerge from the LIM analysis that Matt has done. Nature may create any superposition of them, but maybe they are different entities.

2. **Metrics.** Several indices have been proposed, but it is not clear how useful they can be to describe ENSO diversity. Each ENSO event is not just a static spatial pattern, but evolves in time, and the nature of that evolution is also important to characterize diversity.

3. **Bimodality vs. continuum.** A suitable null hypothesis may be that ENSO diversity occurs over a continuum, and is driven by noise. Are the available data sets adequate to reject the null hypothesis?

4. **Timescales.** While the emphasis of the WG is on ENSO, it may be important to extend the analysis to timescales longer than interannual (Manu’s suggestion). There is some indication that Central Pacific events are associated with a lower frequency modulation, and in general, there is not a clear distinction between different timescales of variability in the Tropics. Considering a broader range of timescales, from interannual to decadal, can also help the interaction with paleoclimate activities.

5. **Strength of ENSO events.** Andrew suggested that examining the strength of ENSO events, rather than the longitudinal location of the SST anomalies, may be a better approach to discriminate between different phenomena. Weak and strong ENSO events evolve differently, and there may be some connection between strength and longitude, as Central Pacific warming events tend to be weaker. In a recent GRL paper, Takahashi et al. (2011) have shown that when mapping ENSO events in the SST Principal Component space, there is the tendency for the events to cluster along orthogonal axis corresponding to weak and strong events.
6. **Teleconnections?** There was some discussion about whether to include teleconnections in our study. I’m not sure whether we reached a consensus, but teleconnections and associated impacts is what makes ENSO diversity relevant. Also, including teleconnections would allow us to broaden the set of paleoclimate data that can be used.

7. **Format of next telecons.** In order to stimulate discussion and develop a more focused approach as a group, it was suggested (Ben G.) to have short presentations in the following teleconferences.

8. **Workshop.** A workshop earlier in the year (September-October at this point) may be useful to involve the broader community to address, in particular, the data and modeling adequacy (or inadequacies).