**Reading guidelines for Lecture 11: The Southern American Monsoon**

**Part 1: synoptic climatology (sections 1, 2, 3, 4)**

1. According to Ramage (1971), why the monsoonal climate is absent in the South America?
2. Discuss the maintenance of Bolivian High. Is the Bolivian High driven thermally or dynamically?
3. Where are the 5 climatological summertime precipitation maxima over the South American continent in January?
4. What is eddy available potential energy?
5. Notions should be given to Fig. 4 and the meaning of energy transformation from divergent flow to rotational flow.
6. Briefly describe the South American Low-Level Jet (SALLJ) and its role in the formation of South American monsoon regime.
7. Briefly describe the application of thermal wind relation in the subtropical South America where a strong east-west temperature gradient exists around the longitude of Altiplano Plateau.
8. The existence of cross-equatorial flow is also a signature of monsoon flow regime (remind you the situation of Indian summer monsoon). See Figs. 4, 7, 8, and 9.
9. The noted seasonal wind reversal, after subtracting the annual mean, is also one of the major factors vouching for the presence of a monsoon clime. See Fig. 9.
10. The appearance of westerly jump is also a signature of monsoon flow regime (remind you the sudden jump of upper-level jet over the East Asia). See Fig. 10.
11. Notions should be given to discuss the features shown in Figs. 15-17. What is the role of sensible heating as well as diabatic heating?

**Part 2: comparison with East Asian summer monsoon (section 5)**

1. Discuss the similarities (and dissimilarities) of physical features (i.e., lower boundary conditions) between SASM and EASM.
2. Discuss the similarities (and dissimilarities) of large-scale features (i.e., circulations in the lower and upper levels) between SASM and EASM. See Fig. 18.