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# Identifying Potential Sources for Enhanced Variance of the Eastern Pacific teleconnection during Late Winter Season

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The Eastern Pacific teleconnection serves as a tropospheric pathway that links ENSO and wintertime weather over East Asia and North America. Both the atmospheric internal feedback forcing from synoptic-scale eddies and the remote influence of tropical Pacific variability play important roles in the occurrence, amplification and persistence of the EP pattern. Previous work has revealed enhanced variance of the EP pattern during boreal late winter season (February-March, FM). To be specific, the EP pattern appears as the second U250-EOF in the Pacific sector over late winter (FM), whereas none of the leading U250-EOFs obtained over early winter (November-December, ND) corresponds to the EP pattern. However, the nature and potential attribution of the enhanced variance of the EP pattern during late winter season remain unclear.

Here we investigate these questions from the perspective of "event" by identifying the EP events (referred to as EPs) and distinguish between EPs with and without its canonical tropical convection pattern (referred to as convective EPs and non-convective EPs), which enables us to separate the contribution from tropical and extratropical regions. Daily data from the Japanese 55-year Reanalysis which covers the extended winter seasons (November-March, NDJFM) from 1958/59 to 2014/15 are used.

Our analysis reveals that, for the non-convective EPs, despite the similar strength during early and late winters, the frequency of occurrence in FM is 1.5 times greater than in ND. For the convective EPs, the strength is considerably larger and the lifespan is significantly longer in FM relative to in ND; the frequency of occurrence also increases from early to late winter. This suggests that the intraseasonal variation of the EP pattern – specifically, the more prominent role it takes over late winter, arises from a combination of variability in EPs' frequency of occurrence, strength and duration, which might be attributed to both the extratropical atmospheric internal processes and the remote influence of tropical Pacific.