Evaluation of a SubX Multimodel Ensemble to predict an intraseasonal index for South America based on Outgoing Long Wave Radiation

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Background: the **S**easonal-**I**ntra**S**easonal (SIS) pattern is the leading EOF of the 10-90-day filtered OLR anomalies in eastern South America. In the extended **austral summer** it is a dipole, and its activity shows the organization of regional and hemispheric anomalies.

R2O: adapting the SIS index from research to operations
   R: SIS index = PC1 of 10-90 days filtered OLR
   O: 1) Compute OLR anomalies, 2) remove the mean of the last 40 days, 3) apply two consecutive 5-point running mean, 4) project onto the SIS pattern -> SIS index

SubX Multimodel ensemble (MME): obtained by averaging all available initializations between Saturdays and Fridays. Hindcasts are used simulating real-time conditions. ECCC, EMC, ESRL, GMAO, NRL and RSMAS models.

SIS index forecast: for each model and MME, SubX daily OLR anomalies respect lead-dependent climatology are joined with low-frequency-filtered observed OLR anomalies, then smoothed and projected onto the SIS pattern.


SubX SIS index forecast, all inits
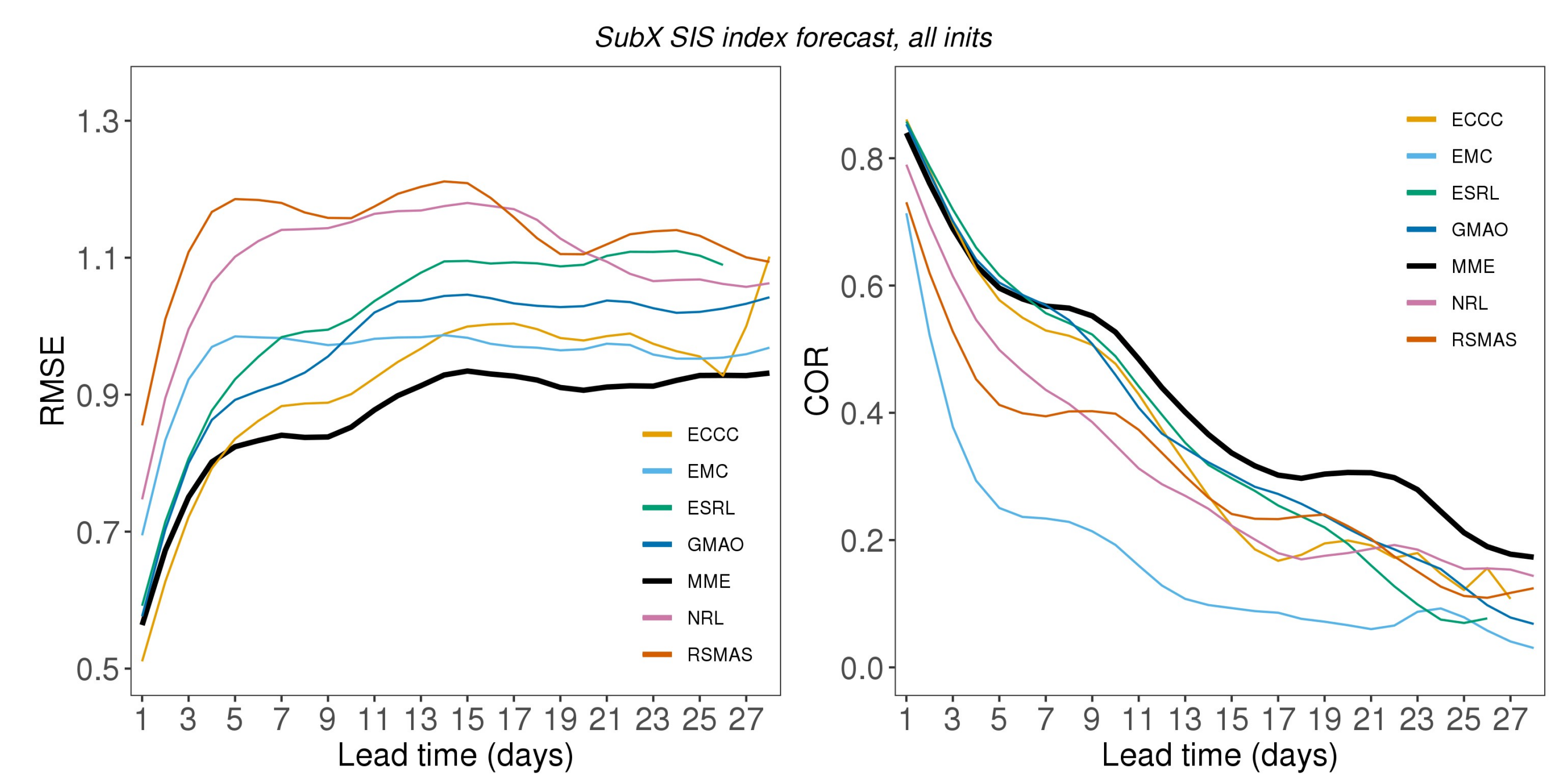
Correlation between observed & MME-SubX SIS index drops below 0.5 and after **10 days**.

SubX multimodel ensamble shows promising results for **predicting** an **intraseasonal index** for South America

SubX SIS index forecast (MME & EM of each model as max/min cone), season 2006/2007
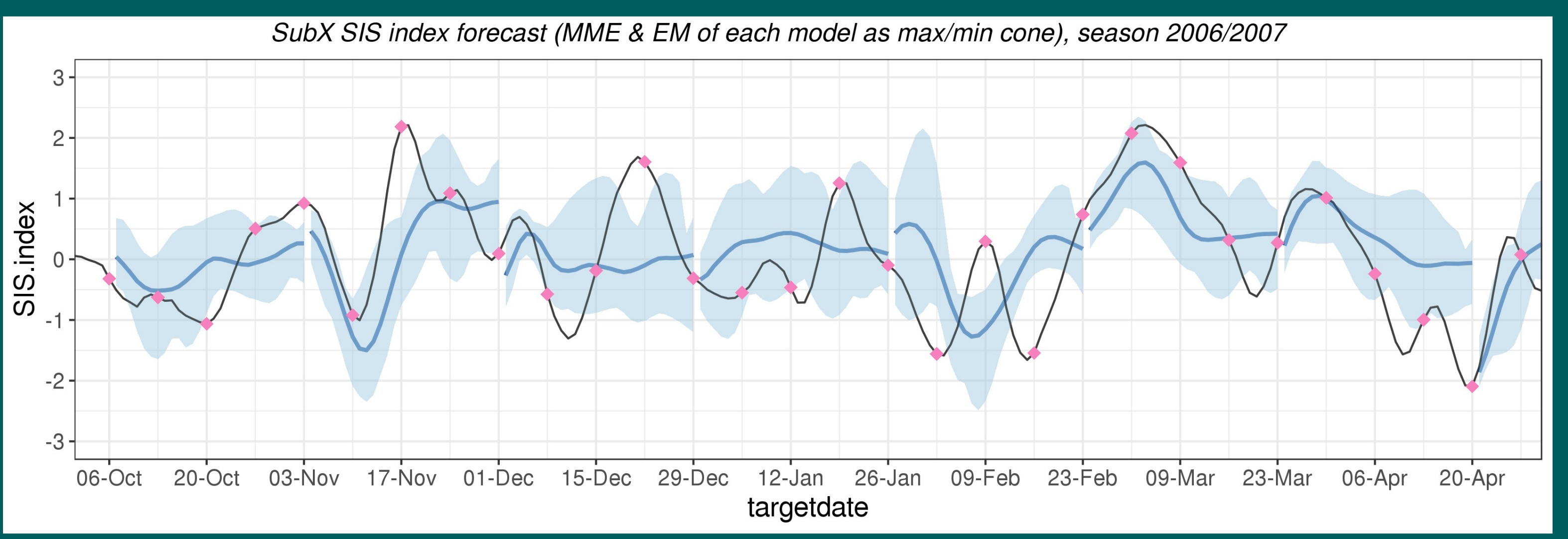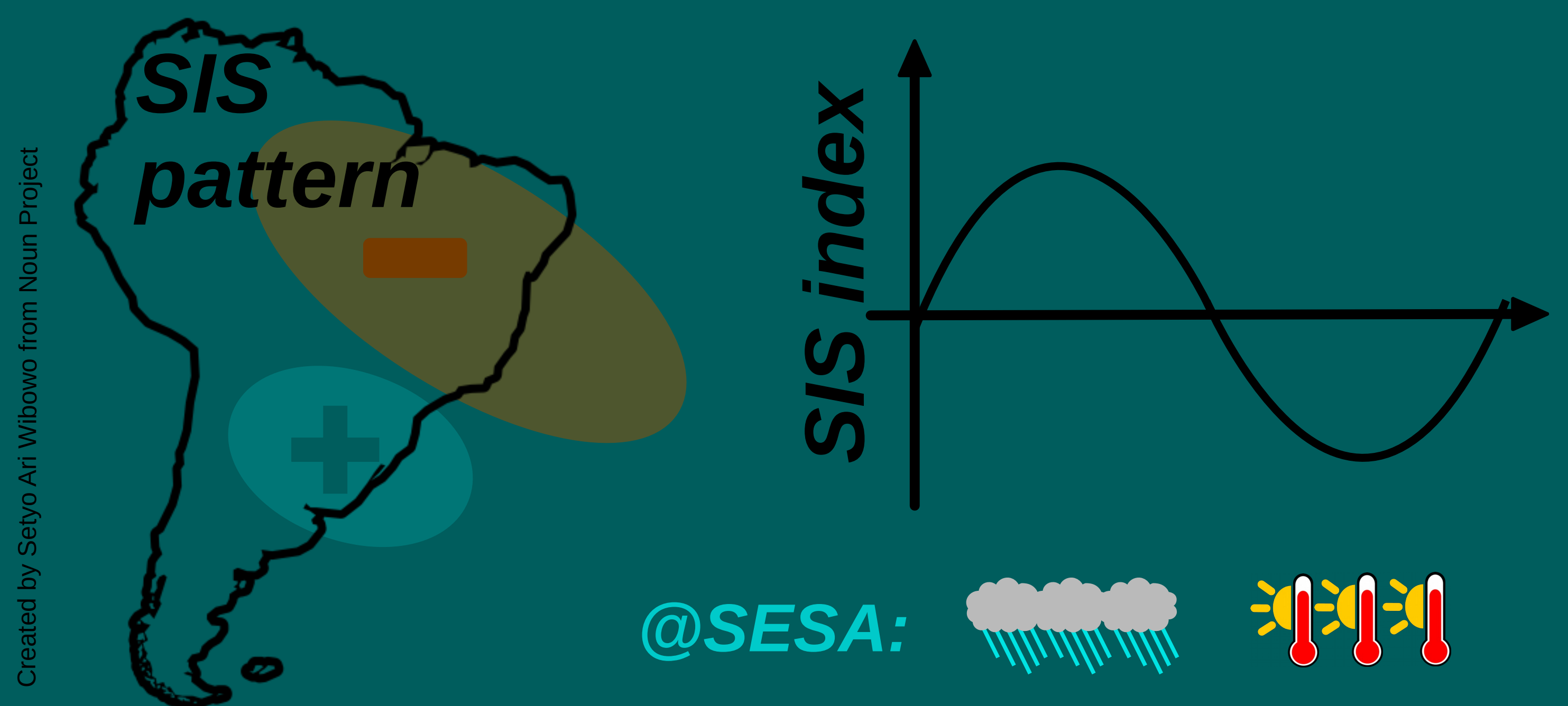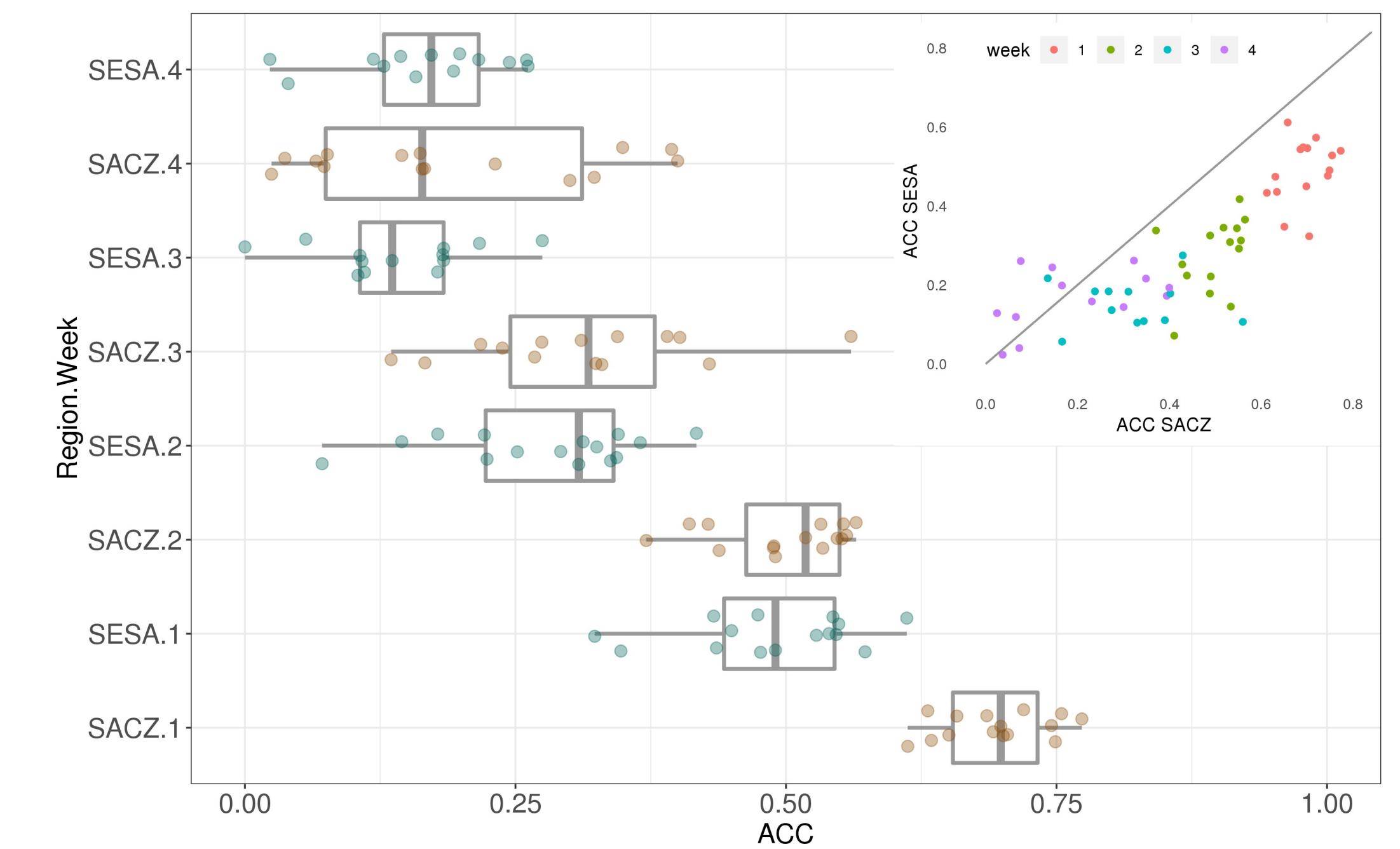
Discrimination of SubX-MME SIS index for SIS>0.75 days **decreases sharply** by week.
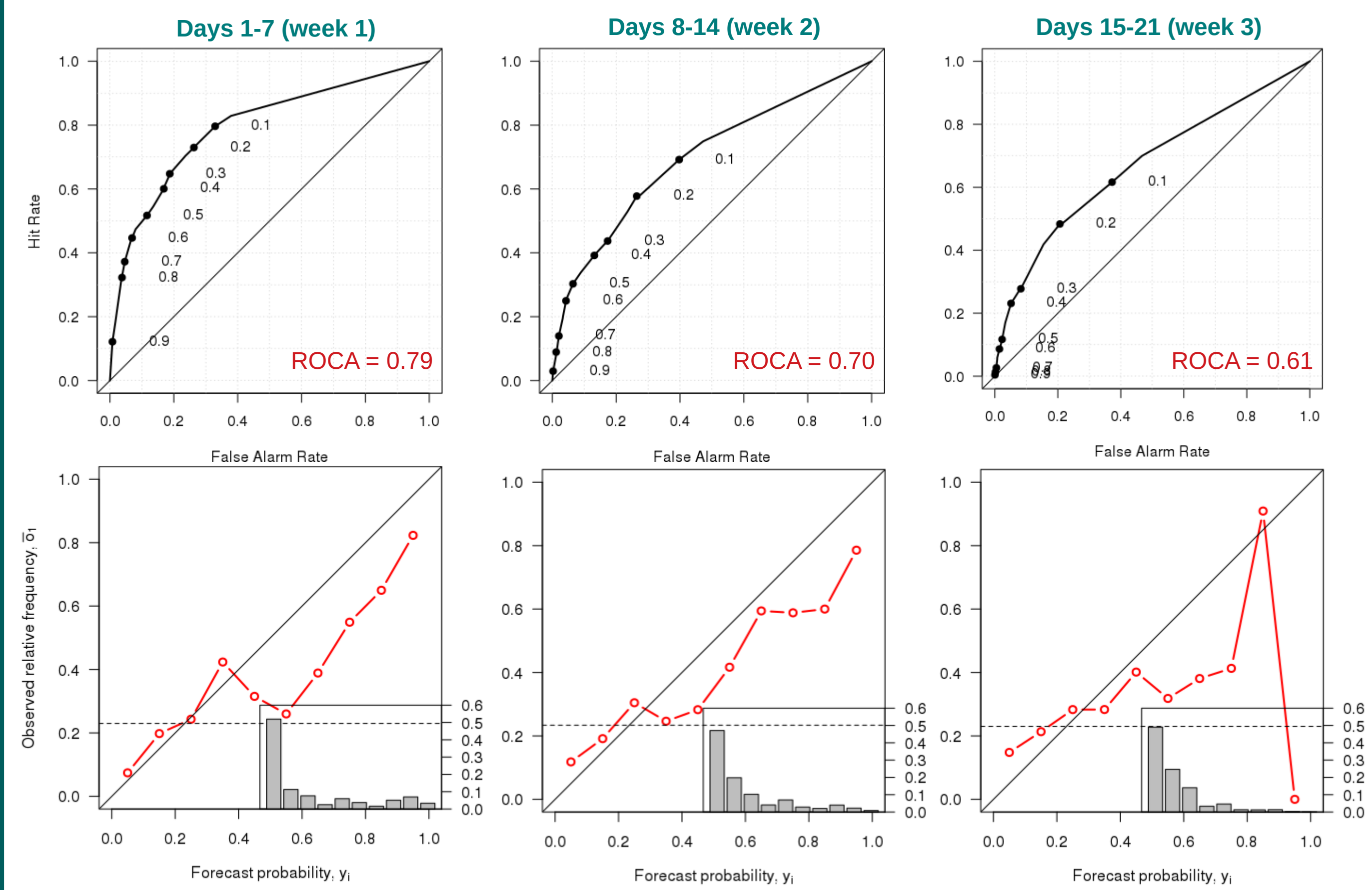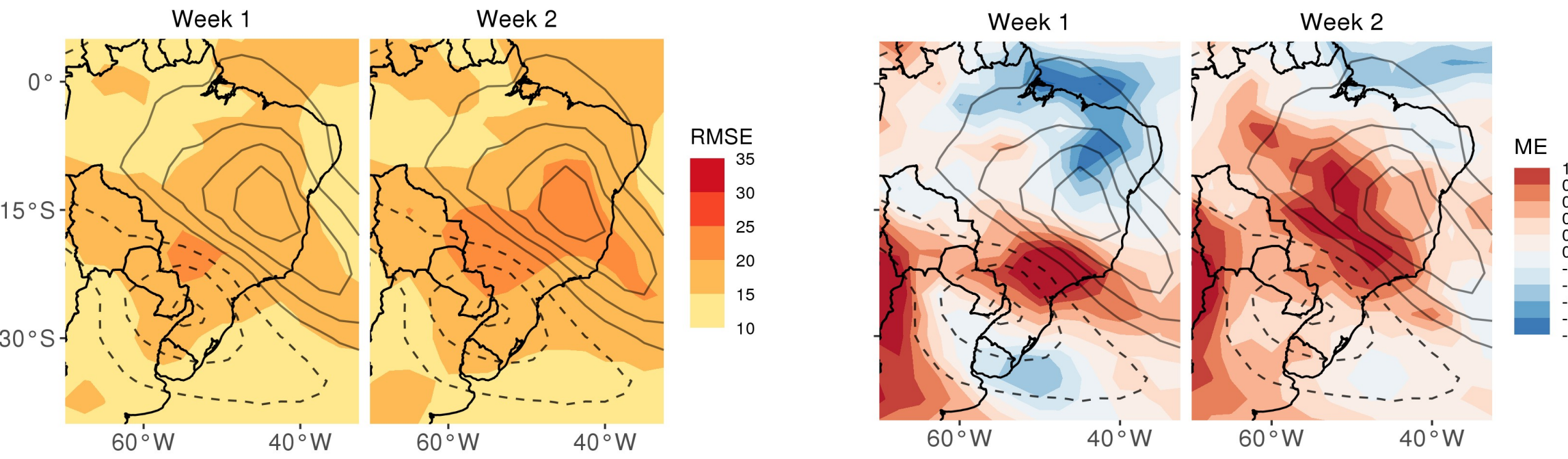

Weekly OLR' analysis shows that SACZ is the main source of predictability **up to week 2**.
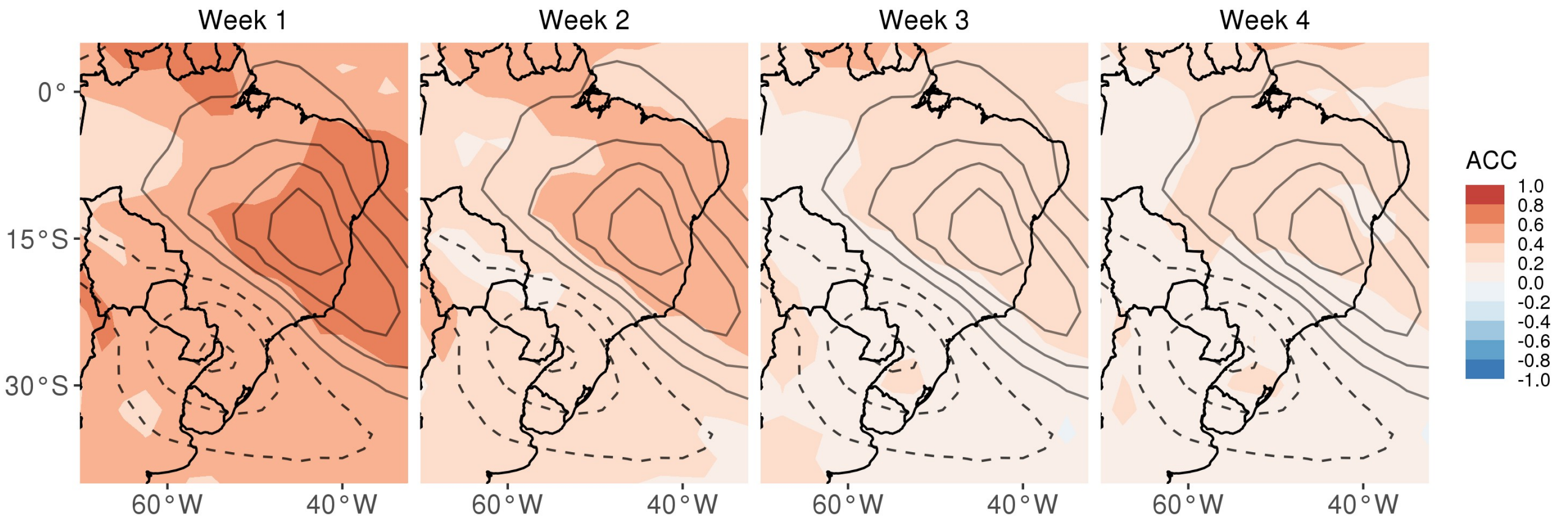
For each summer season, **SACZ shows higher ACC than SESA** region for weeks 1 & 2.

MME larger amplitude **errors** in the SACZ and larger **bias** between SIS action centers.