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Testing a retrospective simulation strategy of typhoon seasons in SE Asia

In recent years, a dynamical downscaling strategy has been developed and applied to the problem of determining characteristics and trends of storminess in the NE Atlantic ("Coastdat"). The technique operates with a regional atmospheric model, which is exposed to global re-analyses not only along the lateral boundaries but also to the large-scale state in the interior of the considered domain above a certain height ("spectral nudging").

The performance of this technique in dealing with SE Asian typhoon is now examined.

Case studies indicate that tropical storms are correctly identified and tracked; also considerably deeper core pressure and higher wind speeds are simulated compared to the driving NCEP re-analyses. When the regional atmospheric model is run without spectral nudging, significant intra-ensemble variability occurs; also additional, non-observed typhoons form.

Two seasons have been identified, with very many typhoons in 1994 and just a few typhoons in 1998. An analysis will be presented on the number of storms, their tracks and their core pressure developments as well as on the mean circulation.