

# Predictability of Tropical Cyclone Track Density in S2S Reforecast

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In this study, we examine the predictability of tropical cyclone (TC) track density in the subseasonal-to-seasonal (S2S) reforecast ensembles of the European Centre for Medium-range Weather Forecasts (ECMWF) using the method of average predictability time (APT). Eleven of the retrieved APT modes (APTMs) of TC track density possess an APT longer than 1 week. The most predictable of them, APTM-1, has an APT of almost three weeks and is found to be closely linked to the Boreal Summer Intraseasonal Oscillation (BSISO) and monsoon variability. Another discovery is the strong relationship between APTM-7 and the activity of mixed Rossby-gravity (MRG) waves and tropical depression (TD) type disturbances despite its short APT of ~12 days. We further carry out a simple case analysis to see how the relatively high predictability of APTM-1 manifests in the S2S model. Our work provides a new possibility for improving medium-range TC forecast skill, and has revealed how underlying tropical variability can play a role in determining TC predictability.

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11:30 a.m.



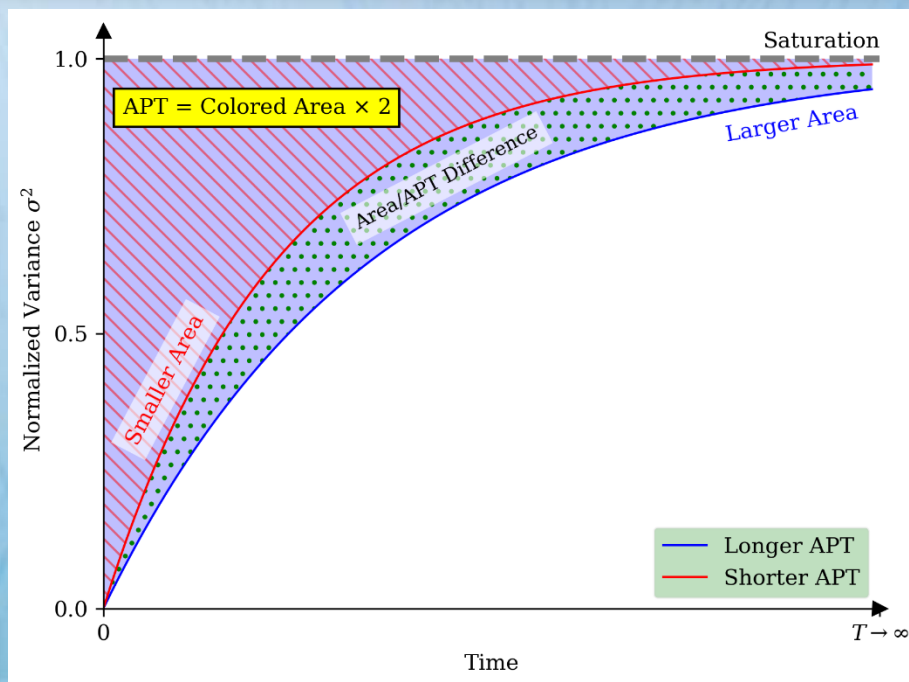
Conference Room, 3/F,  
Mong Man Wai Building



[Zoom Link \(Mixed-mode\)](#)

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APT (Average Predictability Time) indicates how long a pattern will remain predictable until its variance saturates at the climatological value.

