

## **Improvement to the Tropical Cyclone Genesis Index (TCGI)**

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Tropical cyclone (TC) genesis is perhaps one of the more difficult stages of the tropical cyclone lifecycle to diagnose and predict. The Tropical Cyclone Genesis Index (TCGI) was developed to provide an objective storm-centric tool for identifying the probability of TC genesis (0-48 hr and 0-120 hr) in the North Atlantic basin and was transitioned to operations at the NOAA National Hurricane Center in October 2014. The main goal of this current NOAA JHT project is to implement improvements to TCGI that include predictor enhancements and expanding TCGI domain beyond the North Atlantic. Several objectives of the year-1 and year-2 phases of this project have been completed and include: 1) development of a 14-year (2001-2014) North Atlantic and eastern-central North Pacific (EPAC-CPAC) tropical disturbance “Best track” databases that incorporate NOAA-TAFB Dvorak intensity estimates and storm positions; 2) improved predictors for the operational North Atlantic TCGI; 3) identification of predictors and derivation of a new EPAC-CPAC-based version of TCGI; 4) cross validation of the 14-yr TCGI dataset to evaluate the robustness of the updated North Atlantic and new EPAC-CPAC versions of TCGI; 4) development of an ECMWF-based North Atlantic TCGI. Details of these enhancements to TCGI and plans for 2017 will be discussed.