Performance of forecast deep convection objects as inferred from ECMWF simulated infrared radiances

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Deep convection, with its associated hazards of lightning, convective turbulence and possibly hail, is one of the aviation-impact weather phenomena for which SIGMET warnings are issued operationally. Due to a lack of radar observations over vast ocean areas, a commonly-accepted means of identifying regions of significant convection on a regional/global scale would be through combination of sensitive frequency channels of infrared sounders on geostationary satellites.

This study verifies the forecast deep convection “objects” as inferred from IR1 and IR3 channels of the ECMWF-IFS simulated radiance output against corresponding observations from the Advanced Himawari Imager (AHI) of the Himawari-8 satellite over the East Asia and western North Pacific regions (right).

Reference


