Precipitation estimates from geostationary satellites provide the rapid temporal update desired by the operational meteorologists to capture the growth and decay of precipitating cloud systems on a scale of several kilometers. The launch of the Geostationary Operational Environmental Satellite-R Series (GOES-R) ushered a new era of geostationary satellite with the 16 channel Advanced Baseline Imager (ABI) and the Geostationary Lightning Mapper (GLM) and the ability to take full-disk images of Earth at five-minute intervals. A combined IR and lightning convective features and precipitation algorithm for the Pacific Region is being developed using geostationary JMA’s Himawari-8 infrared and ground lightning network GLD360 lightning observations.

Following the heritage of an IR-lightning combined precipitation algorithm over land (Xu, Adler, and Wang 2013, 2014), the Pacific Ocean region IR and lightning convective feature and precipitation algorithm uses a combination of an IR-based C/S technique (CST), multi-channel cloud information, and lightning information to identify deep convection cores and estimates rainfall rates.

This study presents an overview of an oceanic IR-lightning Convective feature and precipitation algorithm, case studies, and provides some thoughts on the next step improvements.