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IMERG Validation with the GPM Validation Network

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The Global Precipitation Measurement (GPM) Mission Validation Network (VN) is a NASA software system run at Marshall Space Flight Center which geometrically matches three-dimensional precipitation retrievals from the GPM Core Observatory (CO) sensors to 118 international ground-based radars. To advance the capabilities for validation of the multi-satellite IMERG product, the GPM VN is being updated to integrate this Level-3 (gridded) product alongside GPM's Level-2 (footprint) products (DPR, CORRA, GPROF). The updated GPM VN will enable the potential for tracing the origins of systematic and random errors back through IMERG into the source GPROF product at instances of GPM-CO overpasses. Furthermore, the GPM VN can support validation efforts to trace the origins of IMERG inaccuracies under a consistent framework across locations including North America (Eastern CONUS, Alaska, Hawaii), Brazil, and Pacific islands (e.g. Kwajalein). This first study with the updated GPM VN will assess the oceanic performance of IMERG V06B across different island sites, as well as stratify errors using the vertical profile of reflectivity and hydrometeor classification corresponding to the IMERG grid pixel. These results will help to inform improvements for future IMERG versions, as well as to aid the community in understanding the conditions under which IMERG can be aptly applied for research and societal applications.