The Baseline Surface Precipitation Network: Benchmarking Satellite Precipitation Products Across Meteorological Regimes

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The International Precipitation Working Group seeks to advance satellite-derived precipitation products and make them broadly available to the global community. A persistent challenge is that validation results depend strongly on site location and season. To address this, satellite precipitation validation must shift from site-based comparisons to evaluations based on meteorological regimes. This shift is essential for advancing precipitation process studies used by global models and for extending site-specific findings to the global scale. Achieving this goal requires collecting data across a wide range of meteorological regimes and processing high-quality weather radar and surface observations as uniformly as possible. Such a network would allow the satellite community to account for regime-dependent biases, improve global products using local information, and estimate uncertainties in regions without validation data. In return, validation site operators would gain clearer insight into how their sites relate to other regimes and increased opportunities for collaboration and co-authorship with the satellite validation community. As a first step, IPWG asks radar operators to identify potential contributors to a Baseline Surface Precipitation Network. Preliminary examples of such data collections will be presented.