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# Enhancing the quality of hydrologic model calibrations and their transfer to operational flood forecasters

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An adequate forecasting model may not perform well if it is inadequately calibrated. Model calibration is often constrained by the lack of adequate calibration data, especially for small river basins with high spatial rainfall variability. Rainfall/snow station networks may not be dense enough to accurately estimate the catchment rainfall/SWE. High discharges during flood events are subject to significant error due to flow gauging difficulty. Dynamic changes in catchment conditions (e.g., urbanization; losses in karstic systems) invariably introduce non-homogeneity in the water level and flow data. This presentation will highlight some of the challenges in reliable calibration of National Weather Service (i.e. US) operational flood forecast models, emphasizing the various challenges in different physiographic/climatic domains. It will also highlight the benefit of using various data visualization techniques to transfer information about model calibration to operational forecasters so they may understand the influence of the calibration on model performance under various conditions.