Maximizing Information from Hydrologic Ensemble Traces Using Alternate Data Displays

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Abstract. The hydrologic ensembles produced by NOAA's National Weather Service contain useful information that is not being captured. Current products examine the aggregate composition of ensemble members (hydrologic simulations) as independent statistical variables but not the configuration or arrangement of streamflow values within each ensemble member. Multiple data characteristics such as data variability of hydrologic ensemble traces can best be identified by showing patterns in the fundamental hydrologic properties of magnitude, frequency, duration, timing and change in flow. Such displays of configuration information could be the basis for a new suite of hydrologic products that provide the end user a more complete picture of the flow regime and improve decision support. This is an area of hydrologic ensemble forecasting that has not been explored but can yield improvements to the entire forecast product process. The Clearwater River at Orofino, ID is used as an example.