Reprocessing of Hydrometeorological Automated Data System Hourly Precipitation Data

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Background
As NCDC became the archival Center of HADS data, we began assessment of historical HADS data for their potential climatic value in high resolution precipitation database. The period is from July 1996 – present, and spatial coverage extends to Alaska and Latin America.

(http://www.nws.noaa.gov/oh/ncdc/)

Reprocessing Steps
- Collect all station names from SHEF format data
- Decode SHEF format HADS for precipitation related variables
- Make all reports in 15min bin for each station
- Detect missing values and restore accumulated precipitation are the same before and after the missing period (less than 24 hours)
- Produce hourly precipitation by backward differencing on top-hour

The output of this process is Baseline Product.

Comparisons with Real-time Product
OHD's HADS program has been generating hourly precipitation in real-time in support of time critical missions such as flood flash warning and Multi-sensor Precipitation Estimates by River Forecast Centers. This real-time hourly product is being collected along with non-HADS precipitation by NCEP and archived in UCAR (users can subscribe to COIDAC system of UCAR).

Quality Issues and Control
Exemplified above are accumulated precipitation that result in negative hourly precipitation. Such spikes and noise (or small spikes) are detected and censored during reprocessing. Output of this post-processing is Level-1 Product.

Current Status in All Domain

How to get them?
The original SHEF format HADS data can be ordered through NCDC customer service (DSI number 6328, document is in preparation). The Baseline and Level-1 products are in beta version. Request directly to Dongsan.Kim@noaa.gov

Product Under Development
Multi-sensor Precipitation Reanalysis (MPR) is an extension of real-time Multi-sensor Precipitation Estimate by merging reprocessed hourly precipitation, daily COOP precipitation with NEXRAD Precip product. The MPR uses parameter optimized under both short and long term time scales of precip events.

Higher Level Product
Level-2 Product: Output of Spatial Consistency Check
Level-3 Product: Output of Multisensor Precipitation Reanalysis

Note: No further text available for the diagram.