# SSHCZO Metadata Worksheet

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| Data File Name | **Discharge\_reanalysis.xlsx** |
| Date Prepared | 01/01/2015 to 08/01/2015 |
| Descriptive Title | Flux-PIHM discharge modeling |
| Update Frequency | Hourly |
| Abstract | Flux-PIHM (Shi and Davis, 2013) was applied in August 2015 to reanalysis discharge in Shale Hills catchment. Flux-PIHM is a fully coupled land surface hydrologic model, which can be used to reproduce discharge, groundwater level, soil water content in different soil layers, snow depth, evapotranspiration, etc. This file present estimation of discharge and related hydrologic processes from Jan 2008 to Aug 2015 based on national databases and local measurement, in order to provide a continuous discharge estimation and to be a supplement of data in the case of data missing from field measurements.  |
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| Data Value Descriptions | * COL1: label = Time, TimeZone=EST.
* COL2: label = Discharge, Units = m/day.
* COL3: label = Precipitation, Units = m/day.
* COL4: label = Spatial Average Ground Water Level, Units = m.
* COL5: label = Spatial Average Evapotranspiration, Units = m/day.
* COL6: label = Spatial Average Soil Moisture in top 10 cm, Units = m3/m3.
* COL7: label = Spatial Average Snow Depth, Units = m.
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| Keywords | Discharge, Flux-PIHM, Hydrology reanalysis. |
| Methods | * Model: Flux-PIHM;
* Soil, and Bedrock Data: Field campaign in 2003(Lin et al. 2006; Lin 2006); Soil Survey Geographic;
* Vegetation type: National Land Cover Database;
* Surface Elevation: USGS NED;
* Forcing data: NLDAS, SURFRAD, MODIS (Corrected by local flux tower data):

DATA SOURCE Precip NLDAS TMP SURFRAD (Corrected by Local Flux Tower data; For missing Data, use NLDAS)RH SURFRAD (Corrected by Local Flux Tower data; For missing Data, use NLDAS)SOLAR SURFRAD (For missing Data, use NLDAS)LONGWV SURFRAD (For missing Data, use NLDAS)PRES SURFRAD (Corrected by Local Flux Tower data; For missing Data, use NLDAS)LAI MODISCorrected using: V\_Corrected=V\_SURFRAD\*mean2010(V\_FluxTower)/mean2010(V\_SURFRAD) * Discharge units in reanalysis are often compared with precipitation and evapotranspiration, so it was expressed in m/day. It can be transformed to m^3/s by multiplying total area of sh (84710m^2) and being divided by 86400 (s/day):

Q = q(m/day)\*84710/86400 (m^3/s) = q(m/day)\*84710 (m^3/day), where q is the value in reanalysis results. |
| Sites | Outlet of Shale Hills: WGS84, Lat 40.664328 Lon -77.907653 |
| Publications | none |
| Citation | The following acknowledgment should accompany any publication or citation of these data: Logistical support and/or data were provided by the NSF-supported Shale Hills Susquehanna Critical Zone Observatory. |
| Data Use Notes | The user of Shale Hills Susquehanna CZO data agrees to provide proper acknowledgment with each usage of the data. Citation of the name(s) of the investigator(s) responsible for the data set, in addition to the generic statement above, constitutes proper acknowledgment. Author(s) (including Shale Hills Susquehanna CZO investigators) of published material that makes use of previously unpublished Shale Hills Susquehanna CZO data agree to provide the Shale Hills Susquehanna CZO data manager with four (4) copies (preferably reprints) of that material for binding as soon as it becomes available. The user of Shale Hills Susquehanna CZO data agrees not to resell or redistribute shared data. The user of these data should be aware that, while efforts have been taken to ensure that these data are of the highest quality, there is no guarantee of perfection for the data contained herein and the possibility of errors exists. These data are defined as either public or private, such that a password may be required for access. |