

DSM2 Quick Start: Output

June 23, 2023



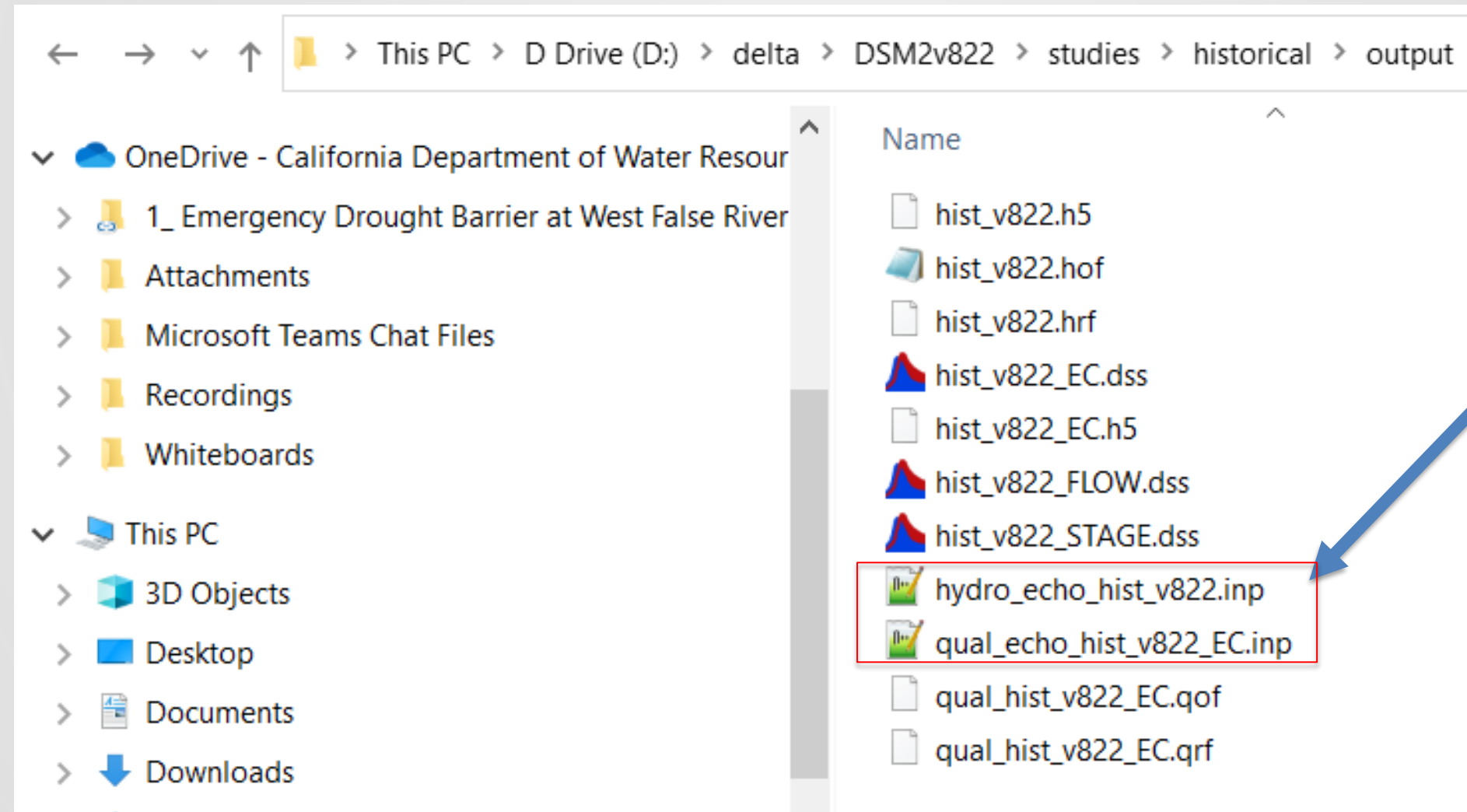
Overview

1. DSM2 echo files
2. Compare two studies with HEC DSS-Vue
3. Create contour plots in DSM2 Animator
4. Vista: View tidefile output
5. HDF View: View tidefile output

1a. DSM2 echo files

DSM2 output folder

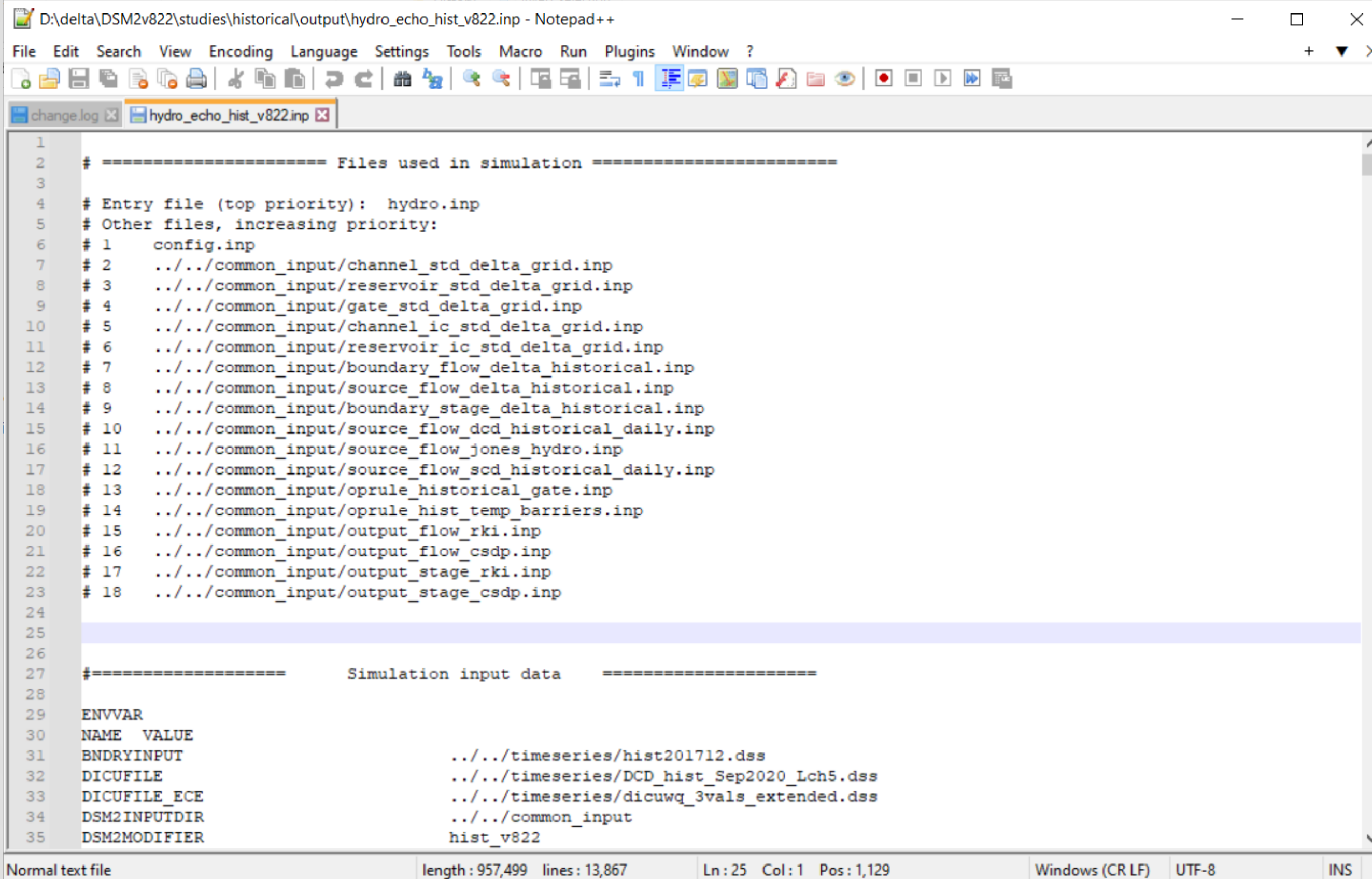
- Merges all fixed input from DSM2 input files
- Can be used as an input file



Echo files (.inp)

1b. DSM2 echo files

The Hydro echo file: all fixed input



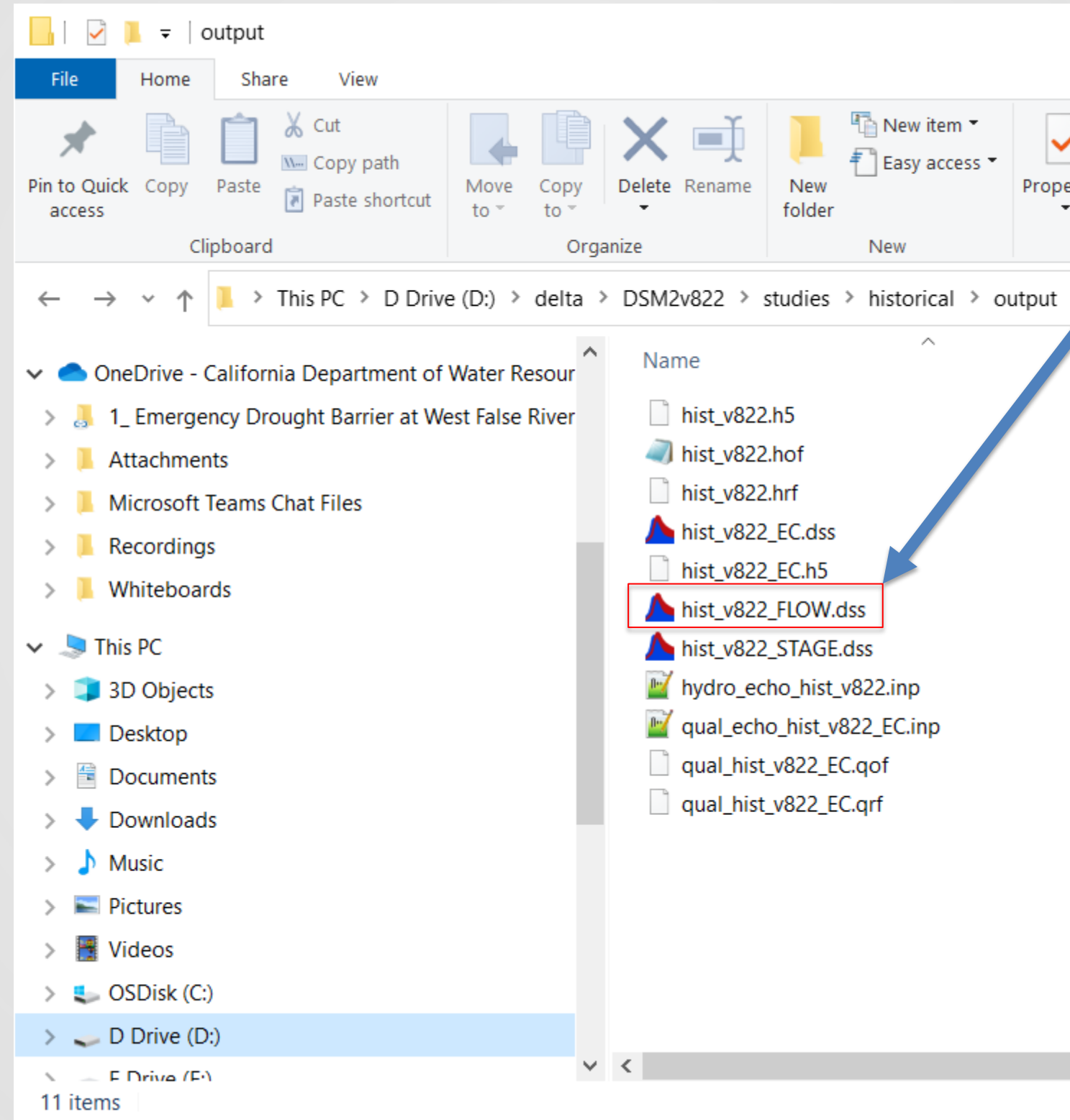
```
D:\delta\DSM2v822\studies\historical\output\hydro_echo_hist_v822.inp - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
change.log x hydro_echo_hist_v822.inp x
1
2 # ===== Files used in simulation =====
3
4 # Entry file (top priority):  hydro.inp
5 # Other files, increasing priority:
6 # 1    config.inp
7 # 2    ../../common_input/channel_std_delta_grid.inp
8 # 3    ../../common_input/reservoir_std_delta_grid.inp
9 # 4    ../../common_input/gate_std_delta_grid.inp
10 # 5    ../../common_input/channel_ic_std_delta_grid.inp
11 # 6    ../../common_input/reservoir_ic_std_delta_grid.inp
12 # 7    ../../common_input/boundary_flow_delta_historical.inp
13 # 8    ../../common_input/source_flow_delta_historical.inp
14 # 9    ../../common_input/boundary_stage_delta_historical.inp
15 # 10   ../../common_input/source_flow_dcd_historical_daily.inp
16 # 11   ../../common_input/source_flow_jones_hydro.inp
17 # 12   ../../common_input/source_flow_scd_historical_daily.inp
18 # 13   ../../common_input/oprule_historical_gate.inp
19 # 14   ../../common_input/oprule_hist_temp_barriers.inp
20 # 15   ../../common_input/output_flow_rki.inp
21 # 16   ../../common_input/output_flow_csdp.inp
22 # 17   ../../common_input/output_stage_rki.inp
23 # 18   ../../common_input/output_stage_csdp.inp
24
25
26
27 #=====          Simulation input data          =====
28
29 ENVVAR
30 NAME  VALUE
31 BNDRYINPUT          ../../timeseries/hist201712.dss
32 DICUFILE            ../../timeseries/DCD_hist_Sep2020_Lch5.dss
33 DICUFILE_ECE        ../../timeseries/dicuwq_3vals_extended.dss
34 DSM2INPUTDIR        ../../common_input
35 DSM2MODIFIER         hist_v822
Normal text file          length : 957,499  lines : 13,867          Ln : 25  Col : 1  Pos : 1,129          Windows (CR LF)  UTF-8          INS
```


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1. DSM2 echo files
- 2. Compare two studies with HEC DSS-Vue**
3. Create contour plots in DSM2 Animator
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2a. Compare two studies with HEC DSS-Vue

Opening first DSS file in HEC DSSVue



Double-click on DSS flow output file

2b. Compare two studies with HEC DSS-Vue

Opening second DSS file in HEC DSSVue

1. Click the folder icon

2. Select the “sac+30”
flow output DSS file

3. click “Open”

hec_dss_vue_hist_v822_FLOW.dss - HEC-DSSVue

File Edit View Display Groups Data Entry Tools Advanced Help

File Name: D:/delta/DSM2v822/studies/historical/output/hist_v822_FLOW.dss

Pathnames Shown: 60 Pathnames Selected: 0 Pathnames in File: 780 File Size: 9.6 MB

hist_v822_FLOW.dss x

Search A: C: E: By Parts: B: D: F:

Number	Part A	Part B	Part C	Part D / range	Part E	Part F
1	HYDROV8.2.2	CHDMC006	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
2	HYDROV8.2.2	CHGRL009	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
3	HYDROV8.2.2	CHSWP003	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
4	HYDROV8.2.2	CHVCT000	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
5	HYDROV8.2.2	CLIFTON_CO...	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
6	HYDROV8.2.2	FAL	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
7	HYDROV8.2.2	FCT	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822
8	HYDROV8.2.2	GEORG_SI	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822

Select De-Select Clear Selections Restore Selections Set Time Window

No time window set.

Open HEC-DSS File

Look in: output

Recent Items Desktop Documents This PC Network

- hist_v822_sac+30_EC.dss
- hist_v822_sac+30_FLOW.dss
- hist_v822_sac+30_STAGE.dss

File name: hist_v822_sac+30_FLOW.dss Files of type: *.dss

Open Cancel

 Don't double-click the second DSS file!

2c. Compare two studies with HEC DSS-Vue

Select first data set for comparison plot

1. Filter B parts, showing only RSAC101

2. Double click here

The screenshot shows the HEC-DSSVue application window with the following details:

- File Name:** D:/delta/DSM2v822/studies/historical/output/hist_v822_FLOW.dss
- Pathnames Shown:** 1, **Pathnames Selected:** 13, **Pathnames in File:** 780, **File Size:** 9.6 MB
- Search:** A: [dropdown], C: [dropdown], E: [dropdown]
- By Parts:** B: RSAC101, D: [dropdown], F: [dropdown]
- Table:**

Number	Part A	Part B	Part C	Part D / range	Part E	Part F
1	HYDROV8.2.2	RSAC101	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V822

Below the table is a text box containing the path: hist_v822_FLOW.dss:/HYDROV8.2.2/RSAC101/FLOW/31Dec2004 - 30Dec2005/15MIN/HIST_V822/

At the bottom are buttons: Select, De-Select, Clear Selections, Restore Selections, and Set Time Window.

At the very bottom, it says: No time window set.

3. The selected data set will now appear here

2d. Compare two studies with HEC DSS-Vue

Select second data set to compare

1. Click the tab to select the sac+30 dss file

2. Filter B parts, showing only RSAC101

3. Double click here

4. The selected data set will now appear here

The screenshot shows the HEC-DSSVue application window. The title bar reads "hist_v822_sac+30_FLOW.dss - HEC-DSSVue". The menu bar includes File, Edit, View, Display, Groups, Data Entry, Tools, Advanced, and Help. The toolbar contains icons for file operations and calculations. The "File Name:" field shows the path "D:/delta/DSM2v822/studies/historical_sac+30/output/hist_v822_sac+30_FLOW.dss". Below this, statistics show "Pathnames Shown: 1", "Pathnames Selected: 26", "Pathnames in File: 780", and "File Size: 9.6 MB".

Two tabs are visible: "hist_v822_FLOW.dss" and "hist_v822_sac+30_FLOW.dss". The "By Parts:" section has dropdown menus for A, B, C, D, E, and F. The "B" dropdown is currently set to "RSAC101".

Number	Part A	Part B	Part C	Part D / range	Part E	Part F
1	HYDROV8.2	RSAC101	FLOW	31Dec2004 - 30Dec2005	15MIN	HIST_V82...

Below the table, a list of file paths is shown, with the second path selected:

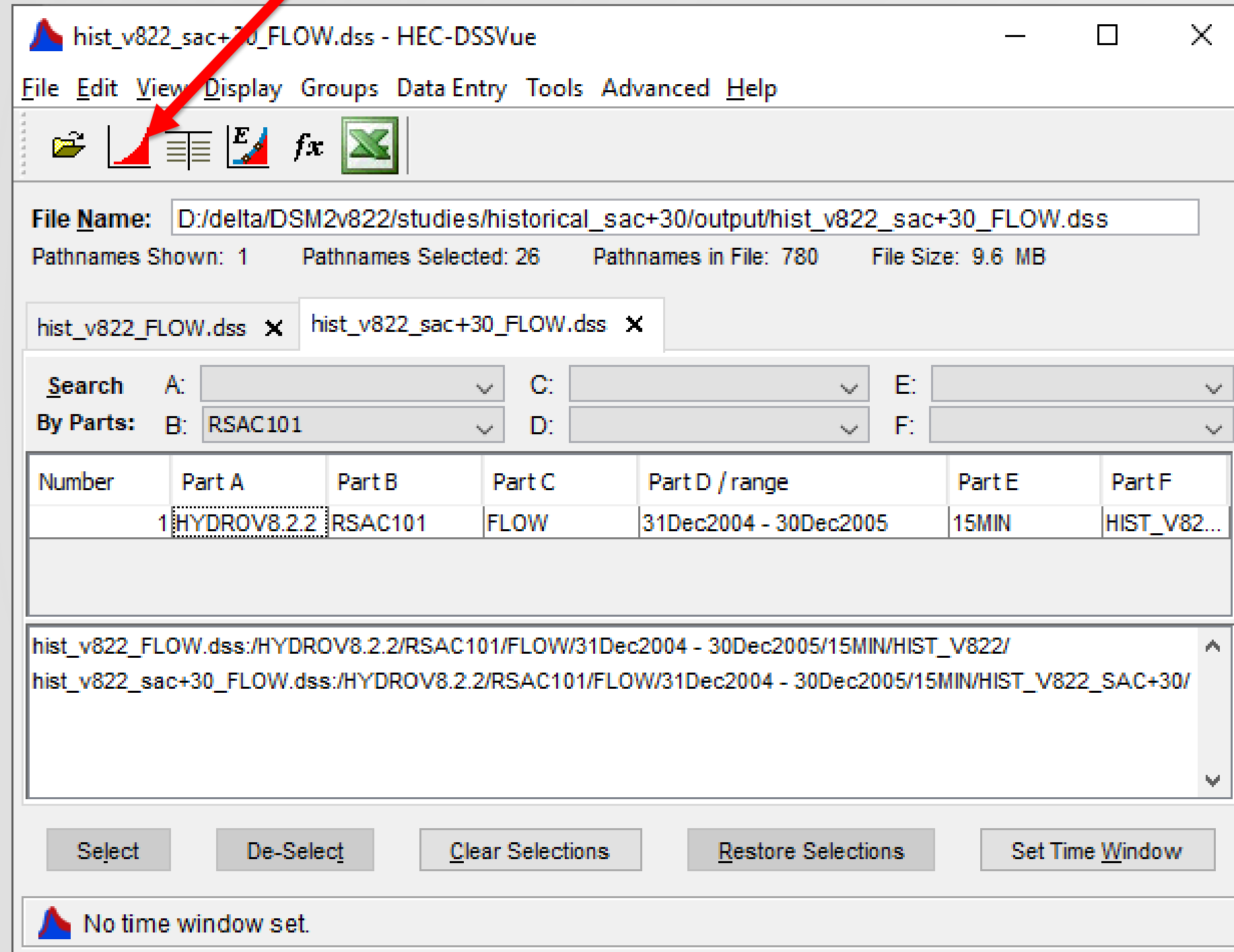
- hist_v822_FLOW.dss:/HYDROV8.2/RSAC101/FLOW/31Dec2004 - 30Dec2005/15MIN/HIST_V822/
- hist_v822_sac+30_FLOW.dss:/HYDROV8.2/RSAC101/FLOW/31Dec2004 - 30Dec2005/15MIN/HIST_V822_SAC+30/

At the bottom, there are buttons for "Select", "De-Select", "Clear Selections", "Restore Selections", and "Set Time Window". A status bar at the very bottom indicates "No time window set."

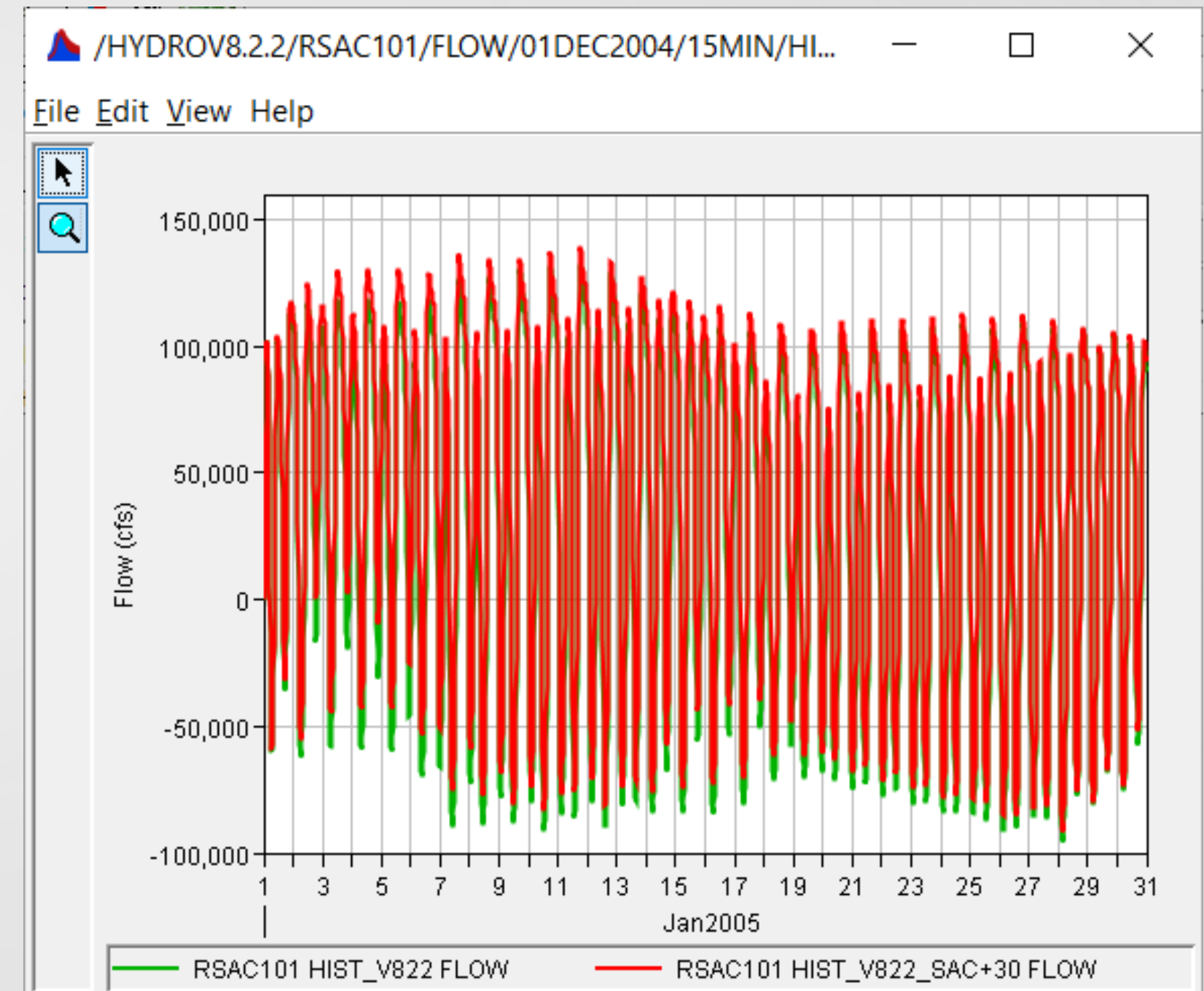
2e. Compare two studies with HEC DSS-Vue

Creating comparison time series plot

1. Click the plot button



2. Click and drag on the plot to zoom in. Right click to zoom out.



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3a. Contour plots with DSM2 Animator

Starting the DSM2 Animator server: 3 steps

 Command Prompt

```
D:\delta\dsm2Animator>start_tomcat.bat
```

1. Navigate to the “dsm2Animator” installation, and execute the batch file “start_tomcat.bat”

2. You should see messages that look like this.

```
INFO: Starting service Catalina
Jun 08, 2023 9:50:11 AM org.apache.catalina.core.StandardEngine startInternal
INFO: Starting Servlet Engine: Apache Tomcat/7.0.47
Jun 08, 2023 9:50:11 AM org.apache.catalina.startup.HostConfig deployWAR
INFO: Deploying web application archive D:\delta\dsm2Animator\apache-tomcat-7.0.47\webapps\ROOT.war
Jun 08, 2023 9:50:14 AM org.apache.catalina.util.SessionIdGenerator createSecureRandom
INFO: Creation of SecureRandom instance for session ID generation using [SHA1PRNG] took [122] milliseconds.
Jun 08, 2023 9:50:14 AM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-apr-8080"]
Jun 08, 2023 9:50:14 AM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["ajp-apr-8009"]
Jun 08, 2023 9:50:14 AM org.apache.catalina.startup.Catalina start
INFO: Server startup in 2691 ms
```

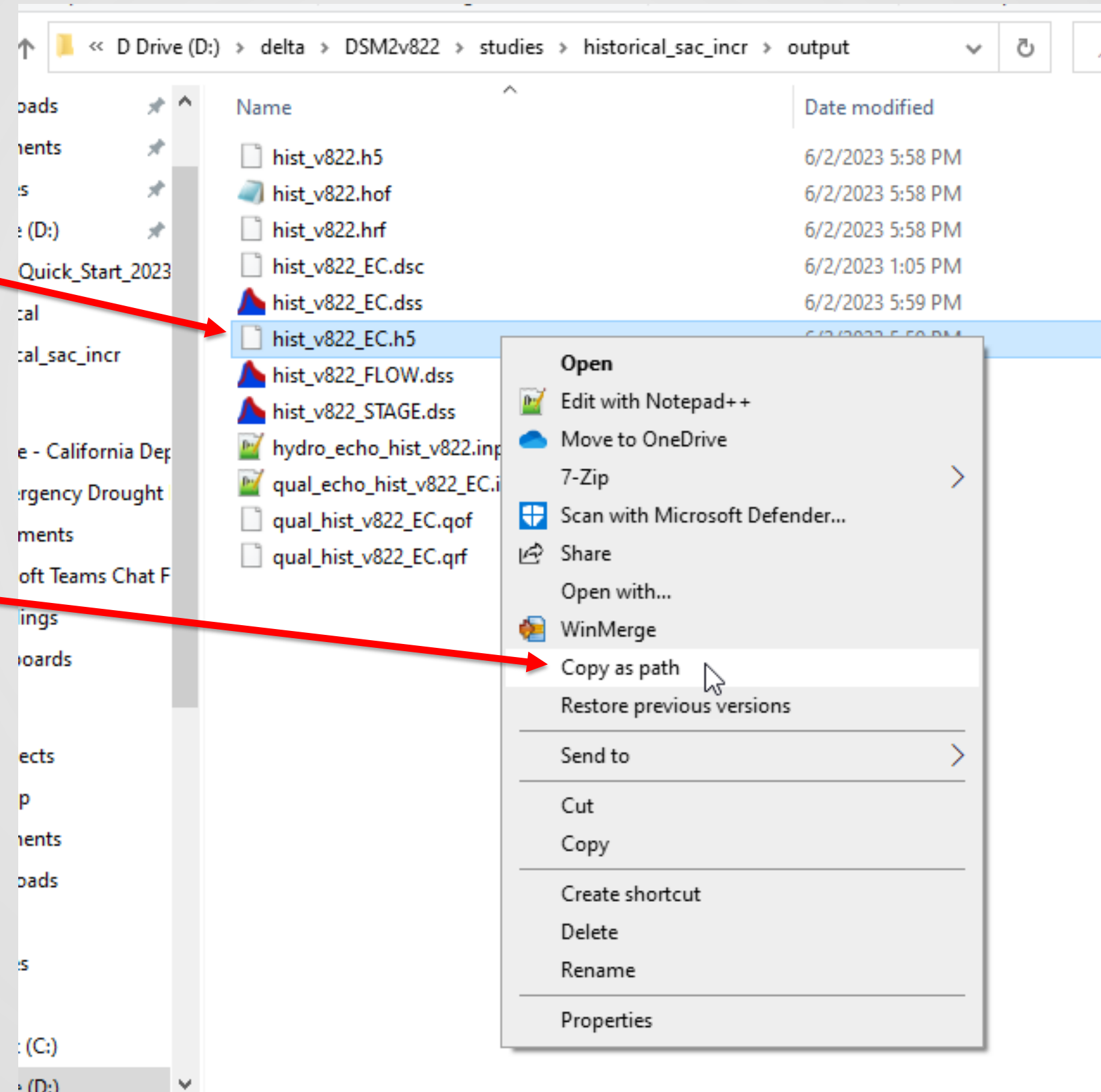
3. Point your browser to <http://localhost:8080>

3b. View tidefile output in HDF View

Copying tidefile path

1. Shift-right click
on **.h5** file

2. Select **“Copy as path”**



3c: Contour plots with DSM2 Animator

DSM2 Animator: EC, single study

+

-

☐

Time: 13JUL2005 1500

Hide

Legend

200

500

700

1000

1500

3700

4500

8000

10000

15000

18000

25000

1. Paste file path for hist_v822_EC.h5 from historical_gate_mod study here (remove the quotes)

3. Click Start/Stop to begin animation

2. Paste value classes here

200,500,700,1000,1500,3700,4500,8000,10000,15000,18000,25000

Data Type

ec

Tidally Filter

Tidefile

D:\delta\DSM2v822\studies\historical\output\hist_v822

Base Tidefile

Difference Type

Absolute

Start/Stop

Date

12JUN2005

Animation Interval: 150 milliseconds

Layer Opacity: 100

Map Background

Hydda.Full

Value Classes

200,500,700,1000,1500,3700,4500,8000,10000,15000,18000,25000

Color Scheme

Select Config

historical_ec

Config Name

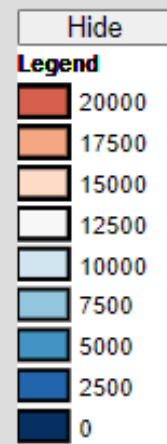
historical_ec

3d: Contour plots with DSM2 Animator

Flow difference between 2 studies



Time: 19JAN2005 2300



1. Paste file path for hist_v822.h5 from historical_sac_incr study here

2. Paste file path for hist_v822.h5 Historical study here

4. Click Start/Stop button to begin animation

3. Paste value classes here

20000,17500,15000,12500,10000,7500,5000,2500,0

Data Type
flow ☐ Tidally Filter

Tidefile
D:\delta\DSM2v822\studies\historical_sac_incr\output\hist_v822.h5

Base Tidefile
D:\delta\DSM2v822\studies\historical\output\hist_v822.h5

Difference Type
Absolute

☐ Start/Stop ↺

Date
02JAN2005

Animation Interval: 150 milliseconds

Layer Opacity: 100

Map Background
Hydda.Full

Value Classes
20000,17500,15000,12500,10000,7500,5000,2500,0

Color Scheme

Act Config
historical_slr_3ft_vs_base_stage

Fig Name
historical_slr_3ft_vs_base_stage

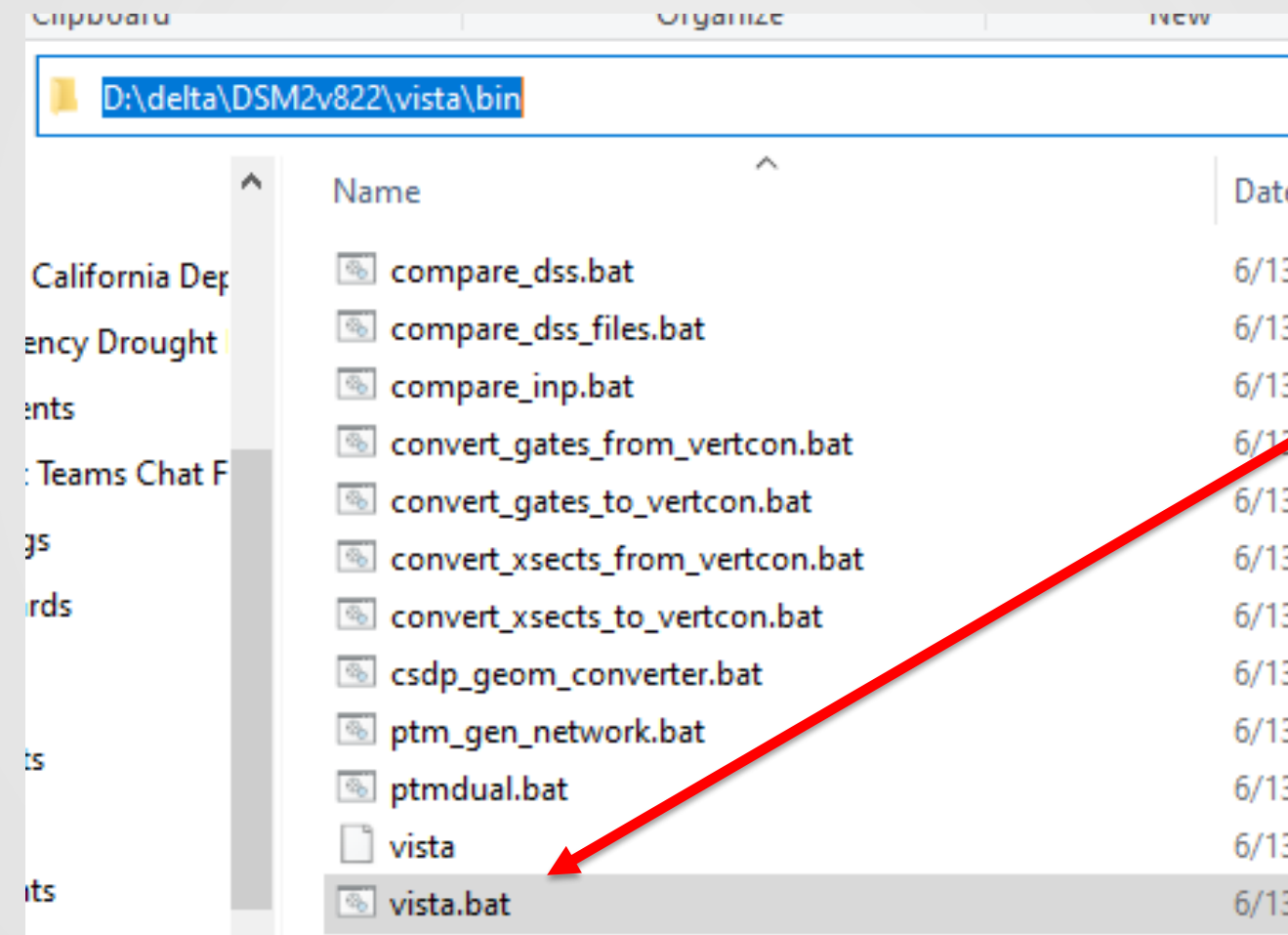
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4a. View tidefile output in Vista

Starting the Vista application

- Model output (flow, stage, area, volume, velocity) at ends of channels and reservoirs
- Plot or tabulate selected data set(s)

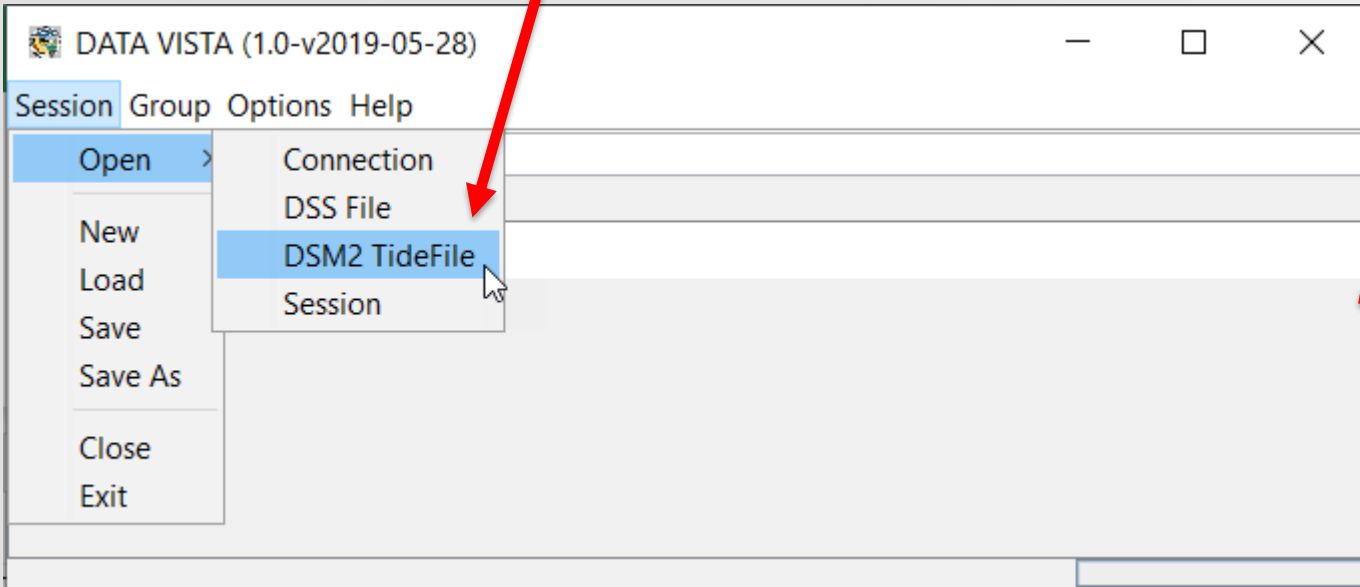


1. Double-click the **vista.bat** file in `d:\delta\DSM2v822\vista\bin\`

4b. View tidefile output in Vista

Opening tidefile in Vista

1. Select Session-Open-DSM2 TideFile



D:\delta\DSM2v822\studies\historical\output\hist_v822.h5

Data Animation

GROUP: D:\delta\DSM2v822\studies\historical\output\hist_v822.h5
NUMBER OF DATA REFERENCES: 5237

Math

Math Period Ops Filling Averaging Conversion Shifting

+ - * / = ☐ Use Number

Filter

Pathname Filter :

Filter A PART B PART C PART D PART E PART F PART

Select

No.	A PART	B PART	C PART	D PART	E PART	F PART
1	HYDRO	1_UPSTREAM	FLOW	31DEC2004 2400...	30MIN	HIST_V822
2	HYDRO	1_DOWNSTREAM	FLOW	31DEC2004 2400...	30MIN	HIST_V822
3	HYDRO	1_UPSTREAM	STAGE	31DEC2004 2400...	30MIN	HIST_V822
4	HYDRO	1_DOWNSTREAM	STAGE	31DEC2004 2400...	30MIN	HIST_V822
5	HYDRO	1_UPSTREAM	AREA	31DEC2004 2400...	30MIN	HIST_V822
6	HYDRO	1_DOWNSTREAM	AREA	31DEC2004 2400...	30MIN	HIST_V822
7	HYDRO	1	AVG_AREA	31DEC2004 2400...	30MIN	HIST_V822
8	HYDRO	1	VOLUME	31DEC2004 2400...	30MIN	HIST_V822
9	HYDRO	1_UPSTREAM	VELOCITY	31DEC2004 2400...	30MIN	HIST_V822
10	HYDRO	1_DOWNSTREAM	VELOCITY	31DEC2004 2400...	30MIN	HIST_V822
11	HYDRO	2_UPSTREAM	FLOW	31DEC2004 2400...	30MIN	HIST_V822

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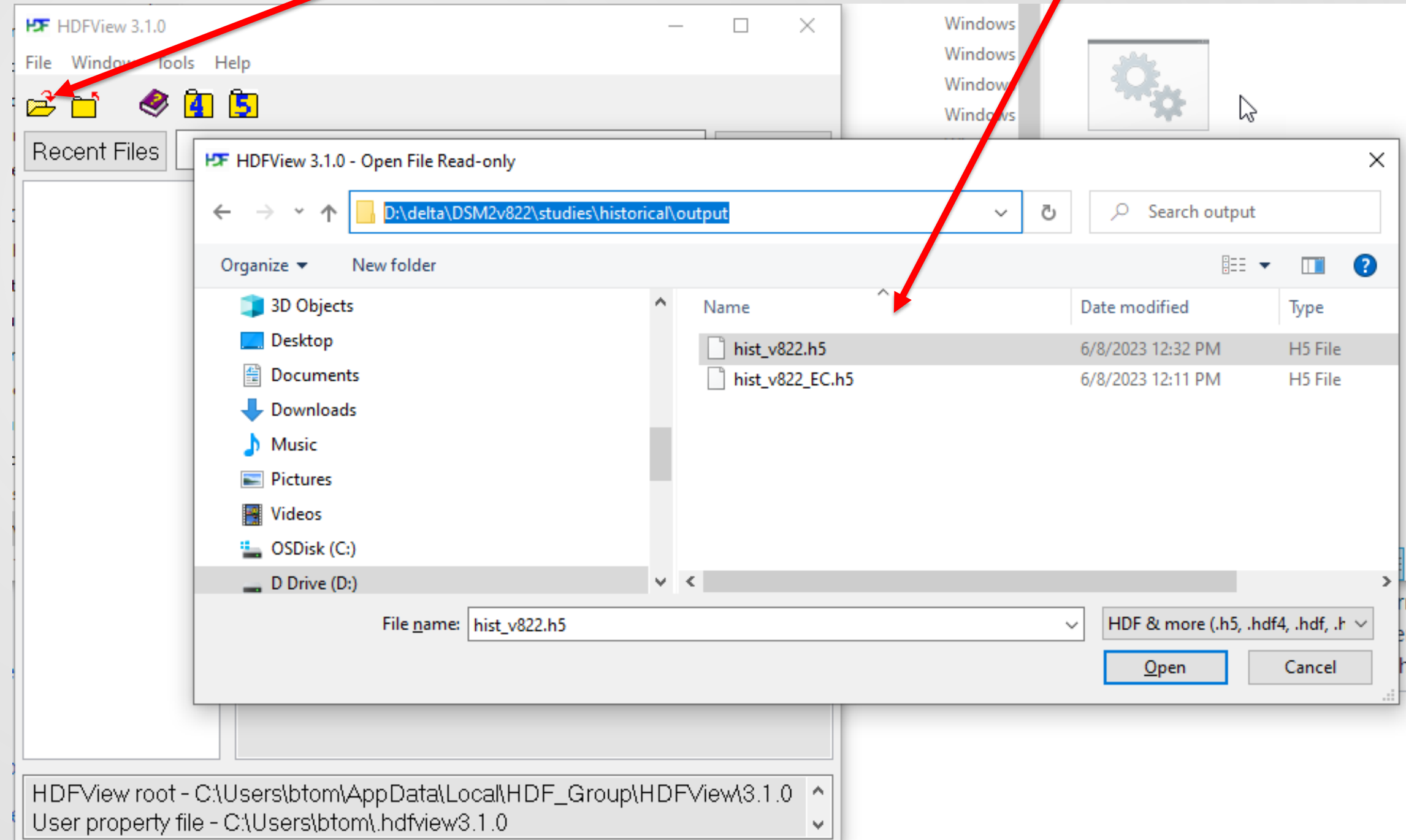
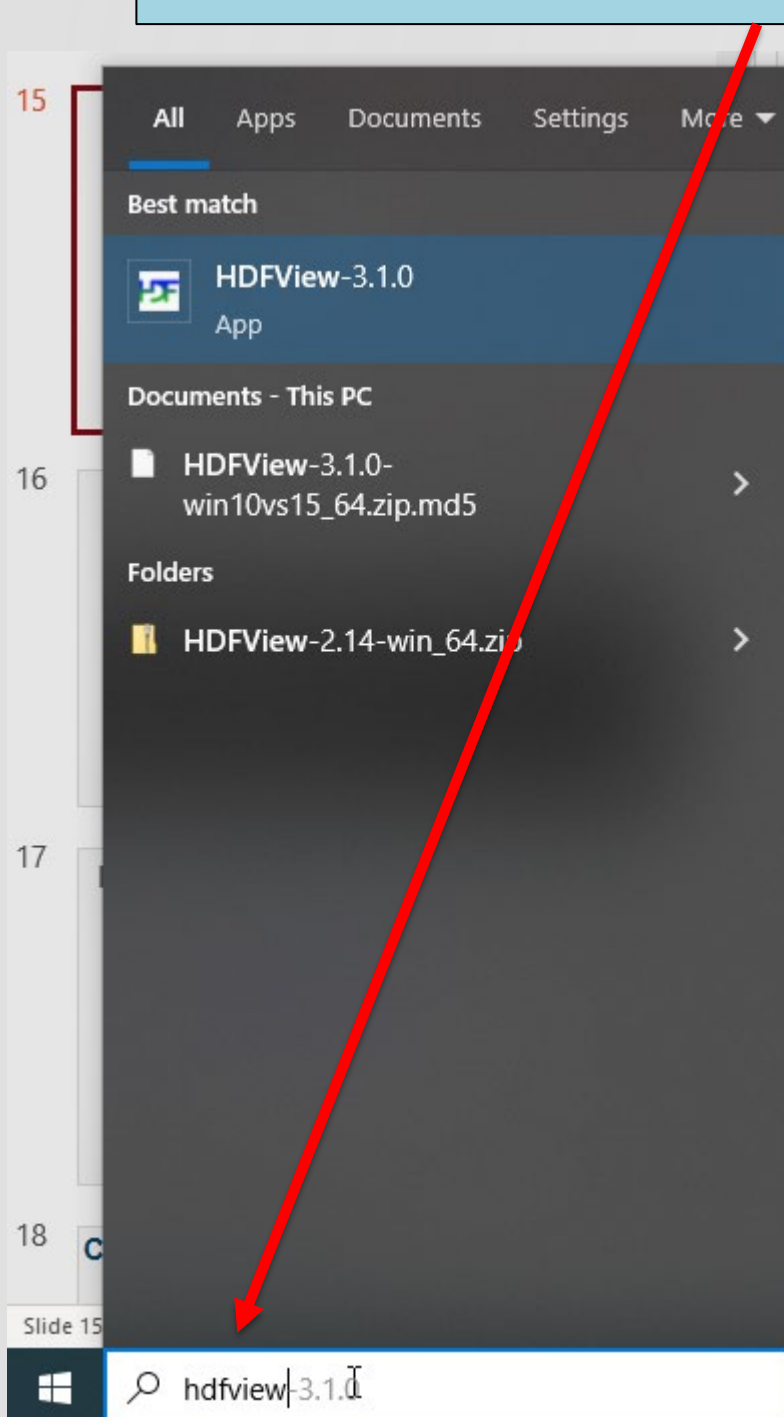
5a. View tidefile output in HDF View

Opening HDFView, and opening a tidefile

1. Search for **HDFView** in the Windows search box. Click the HDFView icon

2. Click the **folder** icon

3. Select an **.h5** file to load



SOURCES

5b. View tidefile output in HDF View

viewing stage output time series

Double-click

The screenshot shows the HDFView 3.1.0 interface. On the left, the 'Recent Files' list shows 'hist_v822.h5'. The tree view on the left shows the following structure:

- hist_v822.h5
 - hydro
 - data
 - channel area
 - channel avg area
 - channel flow
 - channel stage**
 - qext flow
 - reservoir flow
 - reservoir height
 - transfer flow
 - geometry
 - input

The 'channel stage' object is selected. The 'Object Attribute Info' panel shows the following attributes:

Name	Type
CLASS	String, length = 10
DIMENSION_LABELS	String, length = va
interval	String, length = 5,
model	String, length = 5,
model_version	String, length = 3,
start_time	String, length = 19

The 'Data Display' window shows the 'channel stage' data as a table. The table has 11 rows (0 to 10) and 8 columns (0 to 7). The data is as follows:

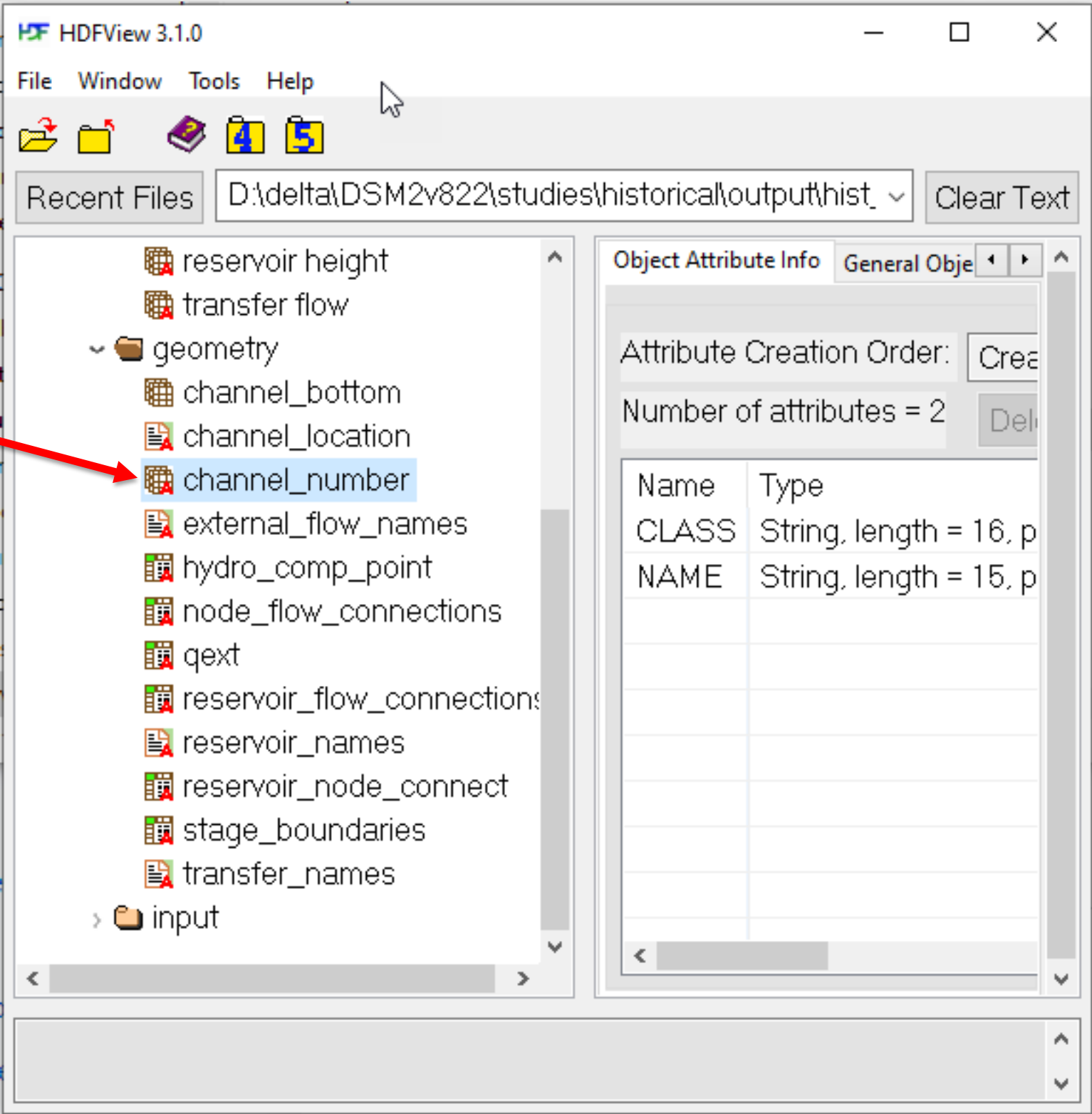
	0	1	2	3	4	5	6	7
0	6.4975977	6.991	10.008806	12.334	12.733	11.291079	14.831375	16.90
1	6.829204	6.4075947	10.198287	12.055293	12.449391	11.181914	14.901713	17.45
2	8.011334	6.346938	9.886711	11.760573	12.270631	11.175712	14.922119	17.20
3	8.589956	6.36718	9.718404	11.592373	12.105789	10.863863	14.5993	17.02
4	8.98725	6.4678597	9.669094	11.408724	11.868529	10.692067	14.412505	16.87
5	9.273515	6.630058	9.674394	11.258082	11.69715	10.52995	14.253562	16.71
6	9.487735	6.8090496	9.726336	11.153945	11.56138	10.38121	14.114155	16.58
7	9.653026	6.986606	9.811554	11.086657	11.452445	10.267074	14.006323	16.48
8	9.782602	7.151747	9.915991	11.051823	11.372842	10.180332	13.912544	16.38
9	9.885857	7.301083	10.02786	11.04327	11.315396	10.105831	13.817726	16.28
10	9.969133	7.433781	10.139482	11.051366	11.269831	10.0386...	13.724998	16.18

Stage time series for all channels displayed in separate window

5c. View tidefile output in HDF View

Viewing channel numbers (fixed input)

Double-click



Channel numbers displayed in separate window

channel_number at /hyd	
Table Import/Export Data	
0-based	
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	11
11	12

Questions?

Please enter questions into the chat



Brad Tom (Bradley.Tom@water.ca.gov)

Thank You!



Follow-up Survey

<https://forms.gle/FrXg6JkHnm66WAXa9>



Modeling and Analysis website

<https://water.ca.gov/Library/Modeling-and-Analysis>

- Delta Modeling User Group

Contact: Min.Yu@water.ca.gov

- DSM2 Training

Contact: Kevin.He@water.ca.gov