



## Data User Guide

# ***GPM Ground Validation NASA ER-2 Navigation Data IPHEX***

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### **Introduction**

The GPM Ground Validation NASA ER-2 Navigation Data IPHEX dataset supplies navigation data collected by the NASA ER-2 aircraft for flight dates in May and June 2014 for the Integrated Precipitation and Hydrology Experiment (IPHEX). Payload instruments on the ER-2 included the AMPR, HIWRAP, EXRAD, CoSMIR, LIP, and INMARSAT. This navigation dataset consists of multiple altitude, pressure, temperature parameters, air and ground speed as geolocated records collected at second intervals. The data is available in ASCII format.

### **Citation**

Petersen, Walter A.. 2015. GPM Ground Validation NASA ER-2 Navigation Data IPHEX [indicate subset used]. Dataset available online [https://fcportal.nsstc.nasa.gov/pub/gpm\_validation/iphex/NAV\_ER2/] from the NASA EOSDIS Global Hydrology Resource Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A. doi: <http://dx.doi.org/10.5067/GPMGV/IPHEX/NAV/DATA/002>

### **Keywords:**

NASA, GHRC, IPHEX, ER-2, navigation data; upper air temperature, upper level winds, airspeed, ground speed, altitude, pressure, temperature; AMPR, HIWRAP, EXRAD, CoSMIR, LIP, INMARSAT;

### **Campaign**

The GPM Integrated Precipitation and Hydrology Experiment (IPHEX) was held in North Carolina during the months of April-June 2014. The goal of IPHEX was to characterize warm season orographic precipitation regimes and the relationship between precipitation regimes and hydrologic processes in regions of complex terrain. The IPHEX campaign was part of the development, evaluation, and

improvement of remote-sensing precipitation algorithms in support of the GPM mission through NASA GPM GV field campaign (IPHEX\_GVFC) and the evaluation of Quantitative Precipitation Estimation (QPE) products for hydrologic forecasting and water resource applications in the Upper Tennessee, Catawba-Santee, Yadkin-Pee Dee, and Savannah river basins (IPHEX-HAP, H4SE). NOAA Hydrometeorology Testbed (HTM) has synergy with this project. More information about IPHEX is available here <http://gpm.nsstc.nasa.gov/iphex/>.

## Instrument Description

The ER-2 was equipped with multi-frequency-radiometers (AMPR and CoSMIR), the dual-frequency Ka-Ku band, HIWRAP Ka-Ku band, CRS W-band, and EXTRAD X-band radars. The ER-2 instrument complement collectively functions as an expanded GPM Core “satellite proxy”. This navigation dataset consists of multiple altitude, pressure, temperature parameters, air and ground speed as geolocated records collected at second intervals.

## Investigators

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## File Naming Convention

The GPM Ground Validation NASA ER-2 Navigation Data IPHEX dataset files are named with the following convention:

data format for #1-3: `yyyymmdd-hhmm` for `start_stop`

1) `iphex_naver2_IWG1_20140614-1340_20140614-2939.txt`

2) `iphex_naver2_log_20140614-1443_20140614-2939.txt`

3) `iphex_naver2_NavRec_20140614-1340_20140614-2939.txt`

4) `iphex_naver2_IWG1_20140614.xml` format:

(`yyyymmdd` (start time 00\* end, 23595)

(4) lists parameters

## Data Format Description

The GPM Ground Validation NASA ER-2 Navigation Data IPHEX data are available in ASCII format. The data processing level for these data is 0. More information about NASA data processing levels can be found at <http://science.nasa.gov/earth-science/earth-science-data/data-processing-levels-for-eosdis-data-products/>.

## References

IPHEX-GVFC. 2015. <http://iphex.pratt.duke.edu/node/64>.

IWG1 Parameter names. 2013. <http://www.nasa.gov/centers/dryden/aircraft/ER-2/NAVREC/FY12/IWG1definition.html>

## Contact Information

To order these data or for further information, please contact:

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