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# hydroengine Documentation

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## 1.1 Submodules

## 1.2 hydroengine.RRmodel module

## 1.3 hydroengine.aux\_models module

## 1.4 hydroengine.hydroengine module

## 1.5 hydroengine.rrmodels module

## 1.6 Module contents



### **2.1 Submodules**

### **2.2 utils.DataCollectionNWKN module**

### **2.3 utils.DataCollectionThredds module**

### **2.4 utils.utilsRaster module**

### **2.5 utils.utilsVector module**

### **2.6 utils.utilsOutputs module**

### **2.7 Module contents**





## CHAPTER 3

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hydrovehicle package

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### **3.1 Submodules**

### **3.2 hydrovehicle.hydrovehicle module**

### **3.3 Module contents**



## CHAPTER 4

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### Usage example

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1. open a terminal and cd to the example directory
2. Retrieve climate data from Idaho's Metdata Thredds server from Sept 1, 2012 to August 31, 2013:

```
dataCollectionThredds.py -ds 2012-09-01 -de 2013-08-31 -a precip --flip ↵  
↪vectorFile Domain_latlong.shp  
dataCollectionThredds.py -ds 2012-09-01 -de 2013-08-31 -a tempmax --flip ↵  
↪vectorFile Domain_latlong.shp  
dataCollectionThredds.py -ds 2012-09-01 -de 2013-08-31 -a tempmin --flip ↵  
↪vectorFile Domain_latlong.shp
```

3. Write default parameters for the HBV model and the Muskingum routing model on the basin shapefiles:

```
writeVectorModelParameters.py -subBasinsVectorFile subs1.shp -subBasinOutFile ↵  
↪subsout.shp  
-streamVectorFile riv1.shp -streamOutFile rivout.shp
```

4. Write default parameters for the raster components of the rainfall runoff model:

```
writeRasterModelParameters.py precip_F2012-09-01_T2013-08-31.nc
```

5. Run hydrologic model:

```
hydrovehicle.py 08/31/2016 precip_F2012-09-01_T2013-08-31.nc tempmin_F2012-09-01_ ↵  
↪T2013-08-31.nc  
tempmax_F2012-09-01_T2013-08-31.nc param_files_test.json rivout.shp subsout.shp
```



## CHAPTER 5

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### Indices and tables

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