

# MANUAL

INL/EXT-15-34123

Revision 1

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## HERON User Manual

Cristian Rabiti, Paul W. Talbot, Andrea Alfonsi

Prepared by  
Idaho National Laboratory  
Idaho Falls, Idaho 83415

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# **HERON User Manual**

***Project Manager:***

Cristian Rabiti

***Principal Investigator and Technical Leader:***

Paul W. Talbot

***Main Developers:***

Paul W. Talbot

Andrea Alfonsi



# 1 Cases Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

## 1.1 Case

– no description yet –

The **<Case>** node recognizes the following parameters:

- **name**: *string, required*, – no description yet –

The **<Case>** node recognizes the following subnodes:

- **<mode>**:*ModeOptions*, – no description yet –
- **<metric>**:*EconMetrics*, – no description yet –
- **<differential>**:*bool*, – no description yet –
- **<num\_arma\_samples>**:*integer*, – no description yet –
- **<timestep\_interval>**:*integer*, – no description yet –
- **<history\_length>**:*integer*, – no description yet –
- **<economics>**: – no description yet –

The **<economics>** node recognizes the following subnodes:

- **<ProjectTime>**:*float*, – no description yet –
- **<DiscountRate>**:*float*, – no description yet –
- **<tax>**:*float*, – no description yet –
- **<inflation>**:*float*, – no description yet –
- **<verbosity>**:*integer*, – no description yet –
- **<dispatch\_increment>**:*float*, – no description yet – The **<dispatch\_increment>** node recognizes the following parameters:
  - **resource**: *string, required*, – no description yet –

## 2 Components Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

### 2.1 Component

– no description yet –

The **<Component>** node recognizes the following parameters:

- **name**: *string, required*, – no description yet –

The **<Component>** node recognizes the following subnodes:

- **<produces>**: – no description yet – The **<produces>** node recognizes the following parameters:
  - **resource**: *string\_list, required*, – no description yet –
  - **dispatch**: *dispatch\_opts, optional*, – no description yet –

The **<produces>** node recognizes the following subnodes:

- **<capacity>**: – no description yet – The **<capacity>** node recognizes the following parameters:
  - \* **resource**: *string, optional*, – no description yet –

The **<capacity>** node recognizes the following subnodes:

- \* **<fixed\_value>**: *float*, – no description yet –
- \* **<sweep\_values>**: *float\_list*, – no description yet –
- \* **<opt\_bounds>**: *float\_list*, – no description yet –
- \* **<ARMA>**: *string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
- \* **<Function>**: *string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
- \* **<variable>**: *string*, – no description yet –

- \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
    - **mode**: *growthType, optional*, – no description yet –
  - **<minimum>**: – no description yet – The **<minimum>** node recognizes the following parameters:
    - \* **resource**: *string, optional*, – no description yet –
 The **<minimum>** node recognizes the following subnodes:
    - \* **<fixed\_value>**:*float*, – no description yet –
    - \* **<sweep\_values>**:*float\_list*, – no description yet –
    - \* **<opt\_bounds>**:*float\_list*, – no description yet –
    - \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
      - **variable**: *string, optional*, – no description yet –
    - \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
      - **method**: *string, optional*, – no description yet –
    - \* **<variable>**:*string*, – no description yet –
    - \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
      - **mode**: *growthType, optional*, – no description yet –
  - **<consumes>**:*string\_list*, – no description yet –
  - **<transfer>**: – no description yet –
- The **<transfer>** node recognizes the following subnodes:
- \* **<fixed\_value>**:*float*, – no description yet –
  - \* **<sweep\_values>**:*float\_list*, – no description yet –
  - \* **<opt\_bounds>**:*float\_list*, – no description yet –
  - \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
    - **variable**: *string, optional*, – no description yet –
  - \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
    - **method**: *string, optional*, – no description yet –
  - \* **<variable>**:*string*, – no description yet –
  - \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
    - **mode**: *growthType, optional*, – no description yet –

- **<stores>**: – no description yet – The **<stores>** node recognizes the following parameters:

- **resource**: *string\_list, required*, – no description yet –
- **dispatch**: *dispatch\_opts, optional*, – no description yet –

The **<stores>** node recognizes the following subnodes:

- **<capacity>**: – no description yet – The **<capacity>** node recognizes the following parameters:

- \* **resource**: *string, optional*, – no description yet –

The **<capacity>** node recognizes the following subnodes:

- \* **<fixed\_value>**:*float*, – no description yet –
- \* **<sweep\_values>**:*float\_list*, – no description yet –
- \* **<opt\_bounds>**:*float\_list*, – no description yet –
- \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
- \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
- \* **<variable>**:*string*, – no description yet –
- \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –

- **<minimum>**: – no description yet – The **<minimum>** node recognizes the following parameters:

- \* **resource**: *string, optional*, – no description yet –

The **<minimum>** node recognizes the following subnodes:

- \* **<fixed\_value>**:*float*, – no description yet –
- \* **<sweep\_values>**:*float\_list*, – no description yet –
- \* **<opt\_bounds>**:*float\_list*, – no description yet –
- \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
- \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
- \* **<variable>**:*string*, – no description yet –



- \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –
- **<rate>**: – no description yet –
 

The **<rate>** node recognizes the following subnodes:

  - \* **<fixed\_value>**:*float*, – no description yet –
  - \* **<sweep\_values>**:*float\_list*, – no description yet –
  - \* **<opt\_bounds>**:*float\_list*, – no description yet –
  - \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
    - **variable**: *string, optional*, – no description yet –
  - \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
    - **method**: *string, optional*, – no description yet –
  - \* **<variable>**:*string*, – no description yet –
  - \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
    - **mode**: *growthType, optional*, – no description yet –
- **<initial\_stored>**: – no description yet –
 

The **<initial\_stored>** node recognizes the following subnodes:

  - \* **<fixed\_value>**:*float*, – no description yet –
  - \* **<sweep\_values>**:*float\_list*, – no description yet –
  - \* **<opt\_bounds>**:*float\_list*, – no description yet –
  - \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
    - **variable**: *string, optional*, – no description yet –
  - \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
    - **method**: *string, optional*, – no description yet –
  - \* **<variable>**:*string*, – no description yet –
  - \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
    - **mode**: *growthType, optional*, – no description yet –
- **<demands>**: – no description yet – The **<demands>** node recognizes the following parameters:
  - **resource**: *string\_list, required*, – no description yet –

- **dispatch**: *dispatch\_opts, optional*, – no description yet –

The **<demands>** node recognizes the following subnodes:

- **<capacity>**: – no description yet – The **<capacity>** node recognizes the following parameters:

- \* **resource**: *string, optional*, – no description yet –

The **<capacity>** node recognizes the following subnodes:

- \* **<fixed\_value>**: *float*, – no description yet –
- \* **<sweep\_values>**: *float\_list*, – no description yet –
- \* **<opt\_bounds>**: *float\_list*, – no description yet –
- \* **<ARMA>**: *string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
- \* **<Function>**: *string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
- \* **<variable>**: *string*, – no description yet –
- \* **<growth>**: *float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –

- **<minimum>**: – no description yet – The **<minimum>** node recognizes the following parameters:

- \* **resource**: *string, optional*, – no description yet –

The **<minimum>** node recognizes the following subnodes:

- \* **<fixed\_value>**: *float*, – no description yet –
- \* **<sweep\_values>**: *float\_list*, – no description yet –
- \* **<opt\_bounds>**: *float\_list*, – no description yet –
- \* **<ARMA>**: *string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
- \* **<Function>**: *string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
- \* **<variable>**: *string*, – no description yet –
- \* **<growth>**: *float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –

- **<penalty>**: – no description yet –

The **<penalty>** node recognizes the following subnodes:

- \* **<fixed\_value>**:*float*, – no description yet –
- \* **<sweep\_values>**:*float\_list*, – no description yet –
- \* **<opt\_bounds>**:*float\_list*, – no description yet –
- \* **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
- \* **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
- \* **<variable>**:*string*, – no description yet –
- \* **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –

- **<economics>**: – no description yet –

The **<economics>** node recognizes the following subnodes:

- **<lifetime>**:*integer*, – no description yet –
- **<CashFlow>**: – no description yet – The **<CashFlow>** node recognizes the following parameters:
  - \* **name**: *string, required*, – no description yet –
  - \* **type**: *string, required*, – no description yet –
  - \* **taxable**: *bool, required*, – no description yet –
  - \* **inflation**: *string, required*, – no description yet –
  - \* **mult\_target**: *bool, required*, – no description yet –
  - \* **period**: *period\_opts, optional*, – no description yet –

The **<CashFlow>** node recognizes the following subnodes:

- \* **<driver>**: – no description yet –
- The **<driver>** node recognizes the following subnodes:
- **<fixed\_value>**:*float*, – no description yet –
  - **<sweep\_values>**:*float\_list*, – no description yet –
  - **<opt\_bounds>**:*float\_list*, – no description yet –
  - **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
    - **variable**: *string, optional*, – no description yet –

- **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
- **method**: *string, optional*, – no description yet –
- **<variable>**:*string*, – no description yet –
- **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
- **mode**: *growthType, optional*, – no description yet –
- \* **<reference\_price>**: – no description yet –  
The **<reference\_price>** node recognizes the following subnodes:
  - **<fixed\_value>**:*float*, – no description yet –
  - **<sweep\_values>**:*float\_list*, – no description yet –
  - **<opt\_bounds>**:*float\_list*, – no description yet –
  - **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
  - **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
  - **method**: *string, optional*, – no description yet –
  - **<variable>**:*string*, – no description yet –
  - **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –
- \* **<reference\_driver>**: – no description yet –  
The **<reference\_driver>** node recognizes the following subnodes:
  - **<fixed\_value>**:*float*, – no description yet –
  - **<sweep\_values>**:*float\_list*, – no description yet –
  - **<opt\_bounds>**:*float\_list*, – no description yet –
  - **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
  - **variable**: *string, optional*, – no description yet –
  - **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:

- **method**: *string, optional*, – no description yet –
- **<variable>**:*string*, – no description yet –
- **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
  - **mode**: *growthType, optional*, – no description yet –
- \* **<scaling\_factor\_x>**: – no description yet –  
 The **<scaling\_factor\_x>** node recognizes the following subnodes:
  - **<fixed\_value>**:*float*, – no description yet –
  - **<sweep\_values>**:*float\_list*, – no description yet –
  - **<opt\_bounds>**:*float\_list*, – no description yet –
  - **<ARMA>**:*string*, – no description yet – The **<ARMA>** node recognizes the following parameters:
    - **variable**: *string, optional*, – no description yet –
    - **<Function>**:*string*, – no description yet – The **<Function>** node recognizes the following parameters:
      - **method**: *string, optional*, – no description yet –
      - **<variable>**:*string*, – no description yet –
      - **<growth>**:*float*, – no description yet – The **<growth>** node recognizes the following parameters:
        - **mode**: *growthType, optional*, – no description yet –
  - \* **<depreciate>**:*integer*, – no description yet –





