
Brightway2-parameters Documentation

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Contents

The simplest case is to evaluate a system of variables and formulas:

```
In [1]: from bw2parameters import ParameterSet

In [2]: parameters = {
...:     'Deep_Thought': {'amount': 42},
...:     'East_River_Creature': {'formula': '2 * Deep_Thought + 16'},
...:     'Elders_of_Krikkit': {'formula': 'sqrt(East_River_Creature)'},
...: }

In [3]: ParameterSet(parameters).evaluate()
Out[3]: {'Deep_Thought': 42, 'East_River_Creature': 100, 'Elders_of_Krikkit': 10.0}
```

You can also use and reference global constants. This is useful when sharing some values across several sets of formulas:

```
In [4]: parameters = {
...:     'East_River_Creature': {'formula': '2 * Deep_Thought + 16'},
...:     'Elders_of_Krikkit': {'formula': 'sqrt(East_River_Creature)'},
...: }

In [5]: global_parameters = {'Deep_Thought': 42}

In [6]: ParameterSet(parameters, global_parameters).evaluate()
Out[6]: {'East_River_Creature': 100, 'Elders_of_Krikkit': 10.0}
```

You can call a `ParameterSet` with a list of new variables and formulas. Note that this new list cannot have reference to itself, only to the parameter set defined earlier. Calling set the amount field in the new list:

```
In [7]: another_parameter_list = [
...:     {'formula': 'East_River_Creature + Elders_of_Krikkit'},
...:     {'formula': '42 - Elders_of_Krikkit'},
...:     {'something else': "won't change"}
...: ]

In [8]: ps = ParameterSet(parameters, global_parameters)

In [9]: ps(another_parameter_list)
Out[9]:
[{'amount': 110.0, 'formula': 'East_River_Creature + Elders_of_Krikkit'},
 {'amount': 32.0, 'formula': '42 - Elders_of_Krikkit'},
 {'something else': "won't change"}]
```

Finally, you can modify the parameters dictionary by adding an amount field to all formula parameters:

```
In [10]: ParameterSet(parameters, global_parameters).evaluate_and_set_amount_field()
Out[10]: {'East_River_Creature': 100, 'Elders_of_Krikkit': 10.0}

In [11]: parameters
Out[11]:
{'East_River_Creature': {'amount': 100, 'formula': '2 * Deep_Thought + 16'},
 'Elders_of_Krikkit': {'amount': 10.0, 'formula': 'sqrt(East_River_Creature)'}}
```

Note the following:

- Variables and formulas must be defined with unique names.
- Variable and formula names can't contradict the existing built-in functions. Available functions are documented in the [asteval documentation](#).

- Formulas should not include the equals sign; instead of `{'formula': 'a = b + c', 'name': 'a'}` do `{'formula': 'b + c', 'name': 'a'}`.
- Formulas can only reference defined variables.

Brightway2-parameters is Python 2.7 & 3.3/3.4 compatible, has 100% test coverage, and is 2-clause BSD licensed and free. Source code [on bitbucket](#).