



dynardo

optiSLang[®]

4.1

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Workshop: optiSLang – update

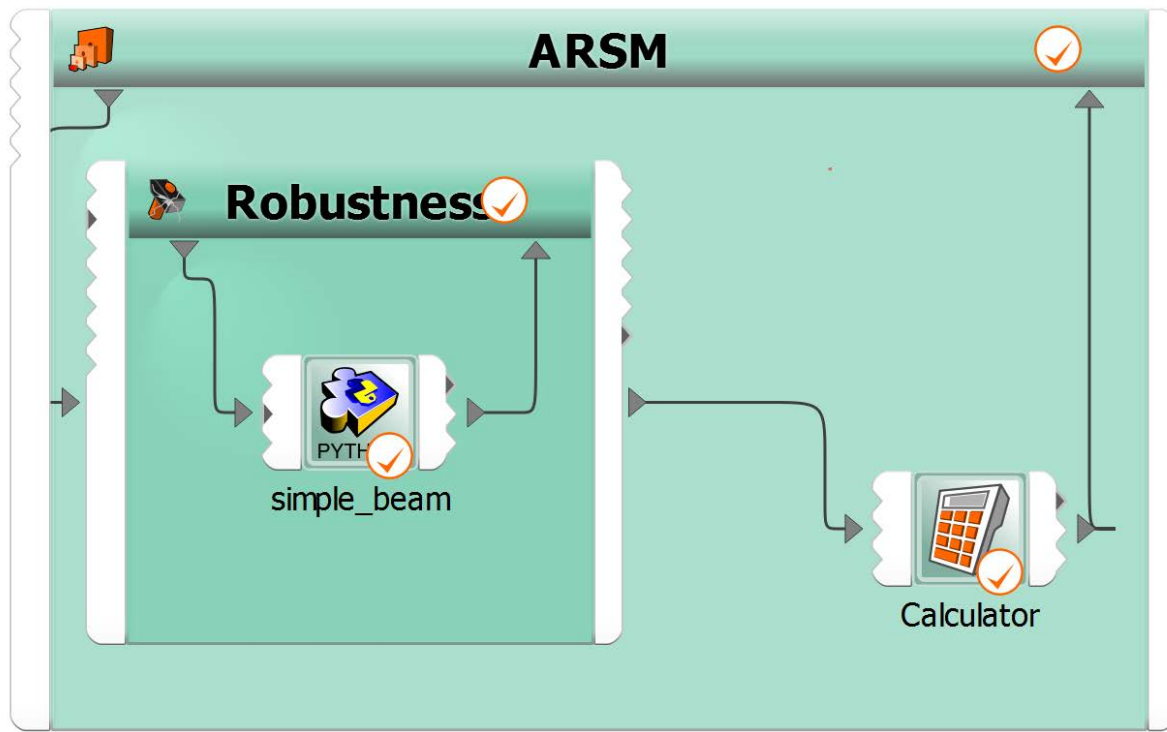
Nested Algorithms (v-RDO)



Build loop in loop systems

- e.g. variance based Robust Design Optimization

? Tutorials: Analysis: Robustness: Oscillator – Robustness analysis (p.17ff)



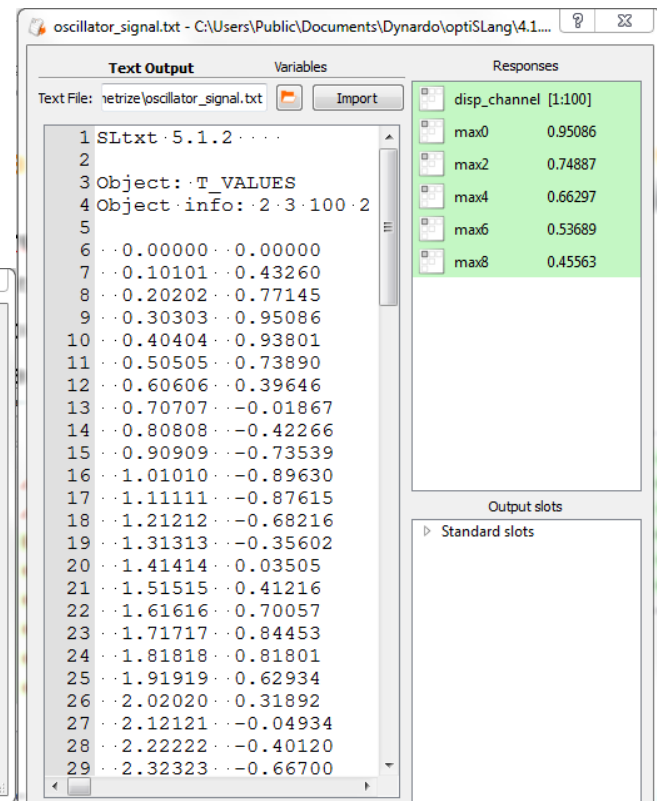
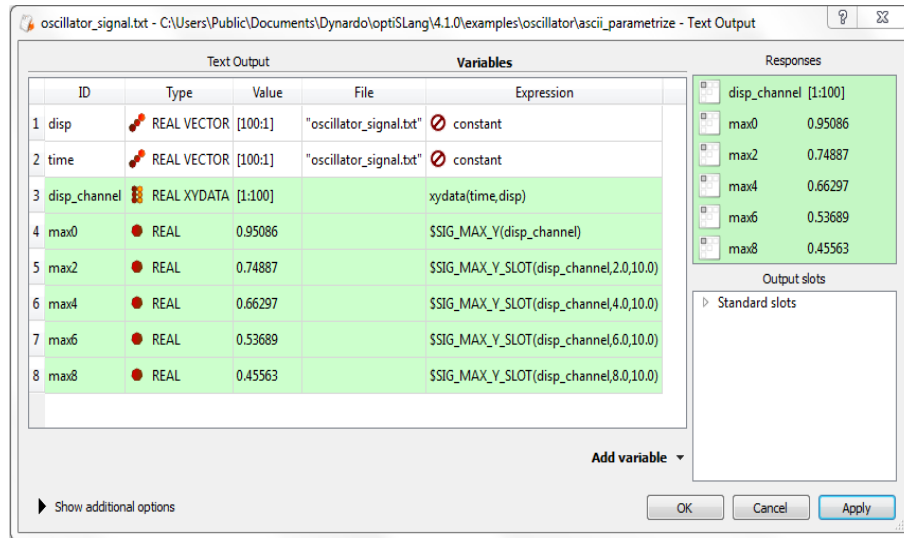


Variables Tab

Postprocess Outputs

Calculator in each integration node

- Combine Signals, Outputs, ...
- Forward your results
- ? Tutorials: Analysis: Calibration: Oscillator (p.17ff)

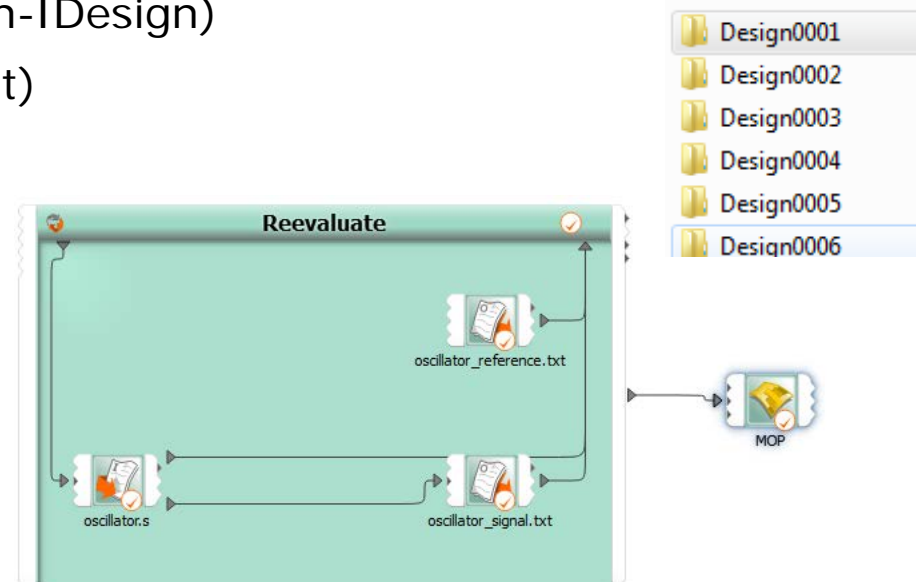


Re-evaluate

Read designs from directories

- Create parametric process chain
 - Textinput: send back designs!
 - or morph (can not be morphed back!)
- Adapt solver call
 - Remove solver (connect ODesign-IDesign)
 - Postprocessor call (e.g. Isprepost)
 - Dummy script
- Merge if previous data is available

? Nodes: Miscellaneous: Reevaluate



Automate Your Flow

Python scripts for

- Build and modify analysis flow in batch
- Automatic plot generation

- ? Examples: Python Examples
- ? help(...)
- ? Dynardo: customized application

End user

- Saves time
- Uses qualified flow
- Needs no detailed knowledge
About optiSLang ;)
- Can spend time for other tasks



```
from py_os_design import *
from py_os_parameter import *
from py_visualize_convenience import *
```

```
s=find_actor("Sensitivity")
```

```
d=s.GetDesigns()
```

```
p=s.parameter_manager
```

```
o=OSLConvenience(d,p)
```

```
#statistics
```

```
o.LinearCorrelation(False, False,
```

```
o.QuadraticCorrelation(False, False,
```

```
o.FilterModel(False, False, "",
```

```
o.AnthillPlot("area01", "area02",
```

```
o.CloudPlot("area01", "area02",
```

```
o.HistoPlot("area01", False, "",
```

```
o.LinearCorrelationCoefficient(
```

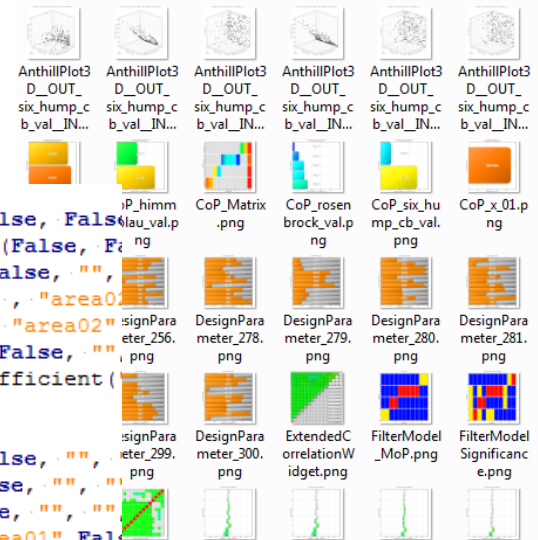
```
#optimization
```

```
o.DesignParameter(1, False, "",
```

```
o.ResponseValues(1, False, "",
```

```
o.ObjectiveData(1, False, "",
```

```
o.ParameterHistory("area01", False,
```

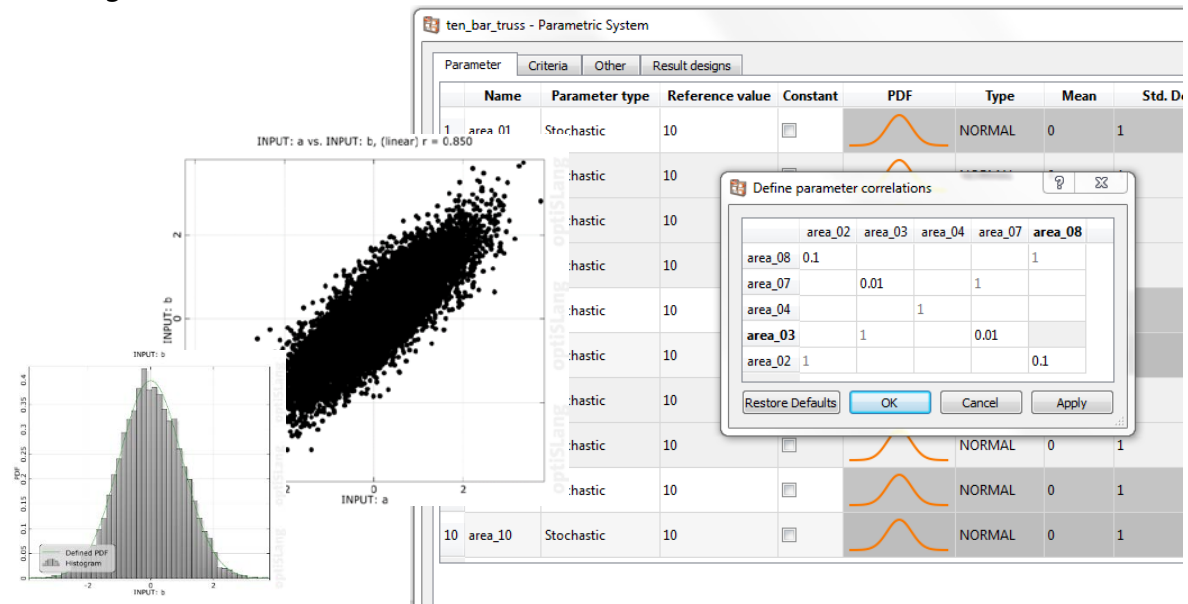


Input Correlations

Parametermanager supports correlations

- select stochastic and mixed parameters
- Choose “Edit correlations” or [Ctrl+Shift+C]
- check validity “on apply”

? Algorithms: Parametric System: Parameter



Conditional Expressions



Use Boolean operations and conditions

- Calculator
- Variables Tab
- Dependent parameter
- ? Mathematical Functions: Conditional

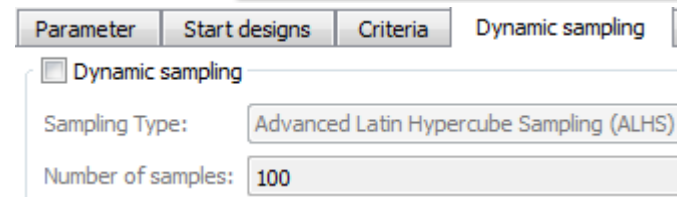
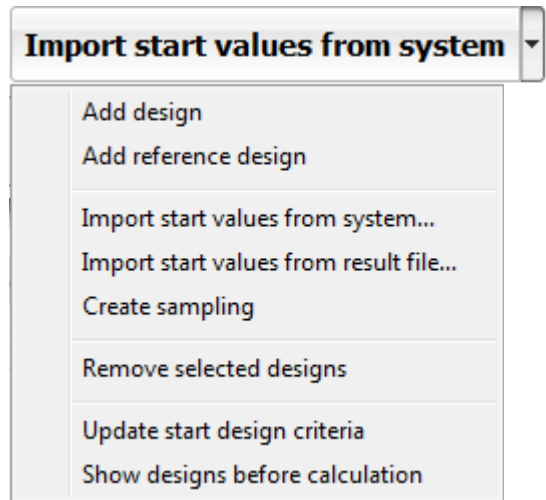
ID	Type	Value		Name	Parameter type	reference va	Constant	Operation
1	● REAL	5	5	a	Deterministic	5	<input type="checkbox"/>	
2	● REAL	4	4	b	Deterministic	4	<input type="checkbox"/>	
3	● REAL	0		c	Dependent	0	<input type="checkbox"/>	#SWITCH a*4 #CASE b*4: 20 #CASE b*5: 0 #DEFAULT: -100
3	● BOOL	true	a > b	condition1			<input type="checkbox"/>	
4	● BOOL	true	a > 4 && !(b < 2)	condition2			<input type="checkbox"/>	
5	● REAL	42	#IF a > 4 #THEN 42 #ELSE 7.5	result1			<input type="checkbox"/>	
6	● REAL	0	#SWITCH a*4 #CASE b*4: 20 #CASE b*5: 0 #DEFAULT: -100	result2			<input type="checkbox"/>	

Startdesigns

Import designs, calculate constraints ...

- Import from ...
- Update Criteria (e.g. input constraints)
- Sort
- Remove infeasible
- Show designs before
- For static sampling in Robustness/Sensitivity:
 - Import or Create Sampling
 - Dynamic Sampling: off

? Algorithms: Startdesigns



Thank you

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Join the update seminar tomorrow

Or contact support@dynardo.de

optiSLang is your tool

WOST is your user conference

So feel free to request, ask, propose ...

