



dynardo

optiSLang®

4.1

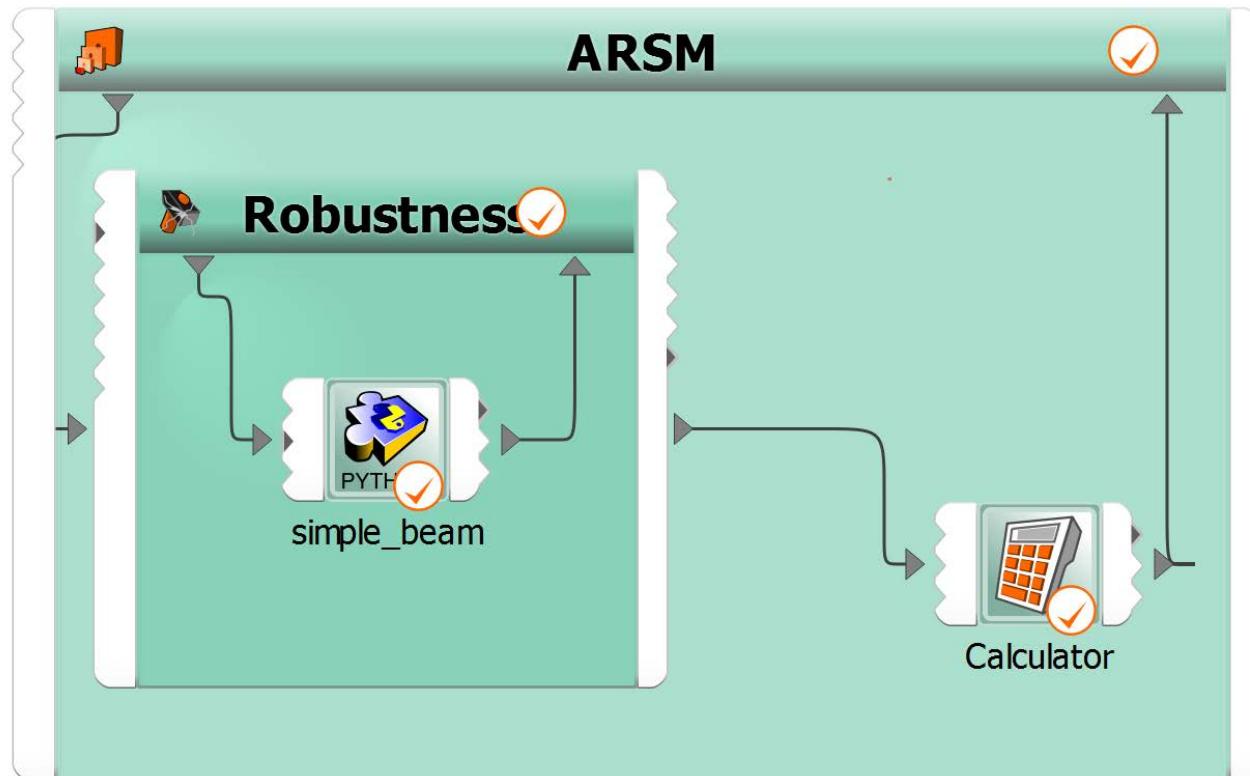
© 2002-2013 Dynardo GmbH. All rights reserved.

optiSLang – recent developments

Nested Algorithms (v-RDO)

Build loop in loop systems

e.g. variance based Robust Design Optimization



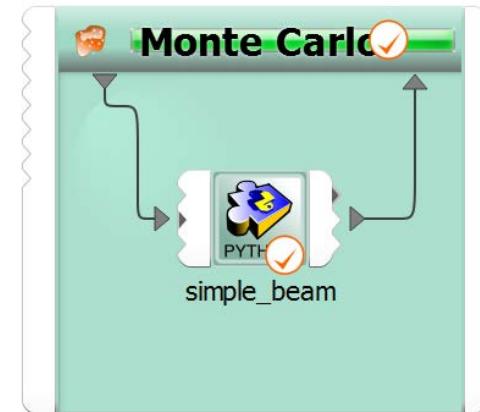
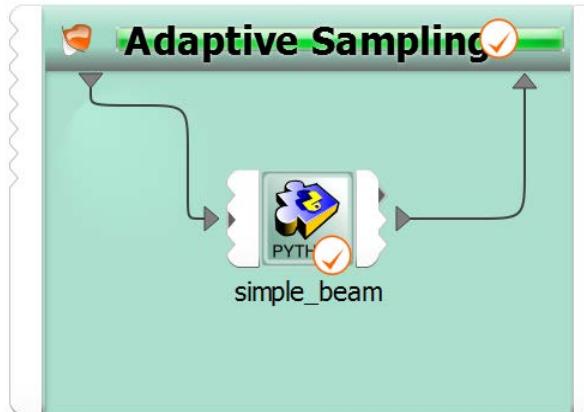
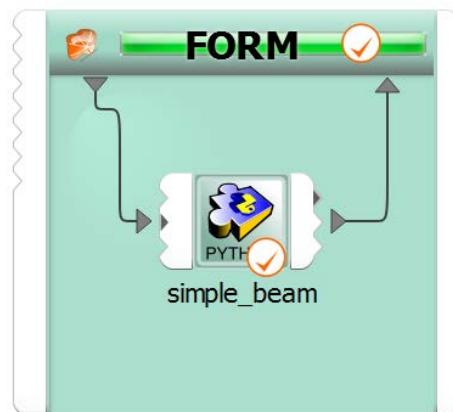
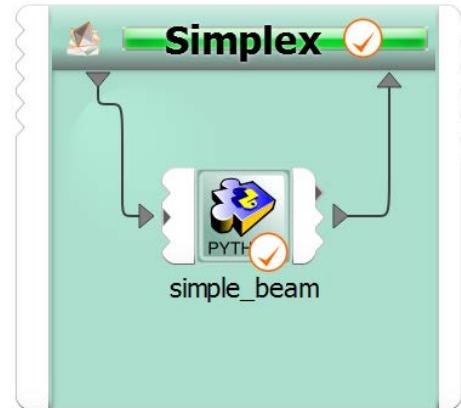
New Algorithms

Optimization

- Simplex

Reliability

- Monte Carlo
- FORM
- Adaptive Sampling



Variables Tab

Postprocess Outputs

Calculator in each integration node

- Combine Signals, Outputs, ...
- Forward your results

oscillator_signal.txt - C:\Users\Public\Documents\Dynardo\optiSLang\4.1.0\examples\oscillator\ascii_parametrize - Text Output

Text Output			Variables	
ID	Type	Value	File	Expression
1	disp	REAL VECTOR [100:1]	"oscillator_signal.txt"	constant
2	time	REAL VECTOR [100:1]	"oscillator_signal.txt"	constant
3	disp_channel	REAL XYDATA [1:100]		xydata(time,disp)
4	max0	REAL	0.95086	\$SIG_MAX_Y(disp_channel)
5	max2	REAL	0.74887	\$SIG_MAX_Y_SLOT(disp_channel,2,0,10,0)
6	max4	REAL	0.66297	\$SIG_MAX_Y_SLOT(disp_channel,4,0,10,0)
7	max6	REAL	0.53689	\$SIG_MAX_Y_SLOT(disp_channel,6,0,10,0)
8	max8	REAL	0.45563	\$SIG_MAX_Y_SLOT(disp_channel,8,0,10,0)

Add variable ▾

▶ Show additional options

OK



oscillator_signal.txt - C:\Users\Public\Documents\Dynardo\optiSLang\4.1....

Text Output			Variables	Responses
Text File:	"oscillator_signal.txt"		Import	
1	SLtxt 5.1.2 ...			
2				
3	Object: T_VALUES			
4	Object.info: 2 3 100 2			
5				
6	.. 0.00000 .. 0.00000			
7	.. 0.10101 .. 0.43260			
8	.. 0.20202 .. 0.77145			
9	.. 0.30303 .. 0.95086			
10	.. 0.40404 .. 0.93801			
11	.. 0.50505 .. 0.73890			
12	.. 0.60606 .. 0.39646			
13	.. 0.70707 .. -0.01867			
14	.. 0.80808 .. -0.42266			
15	.. 0.90909 .. -0.73539			
16	.. 1.01010 .. -0.89630			
17	.. 1.11111 .. -0.87615			
18	.. 1.21212 .. -0.68216			
19	.. 1.31313 .. -0.35602			
20	.. 1.41414 .. 0.03505			
21	.. 1.51515 .. 0.41216			
22	.. 1.61616 .. 0.70057			
23	.. 1.71717 .. 0.84453			
24	.. 1.81818 .. 0.81801			
25	.. 1.91919 .. 0.62934			
26	.. 2.02020 .. 0.31892			
27	.. 2.12121 .. -0.04934			
28	.. 2.22222 .. -0.40120			
29	.. 2.32323 .. -0.66700			

Responses

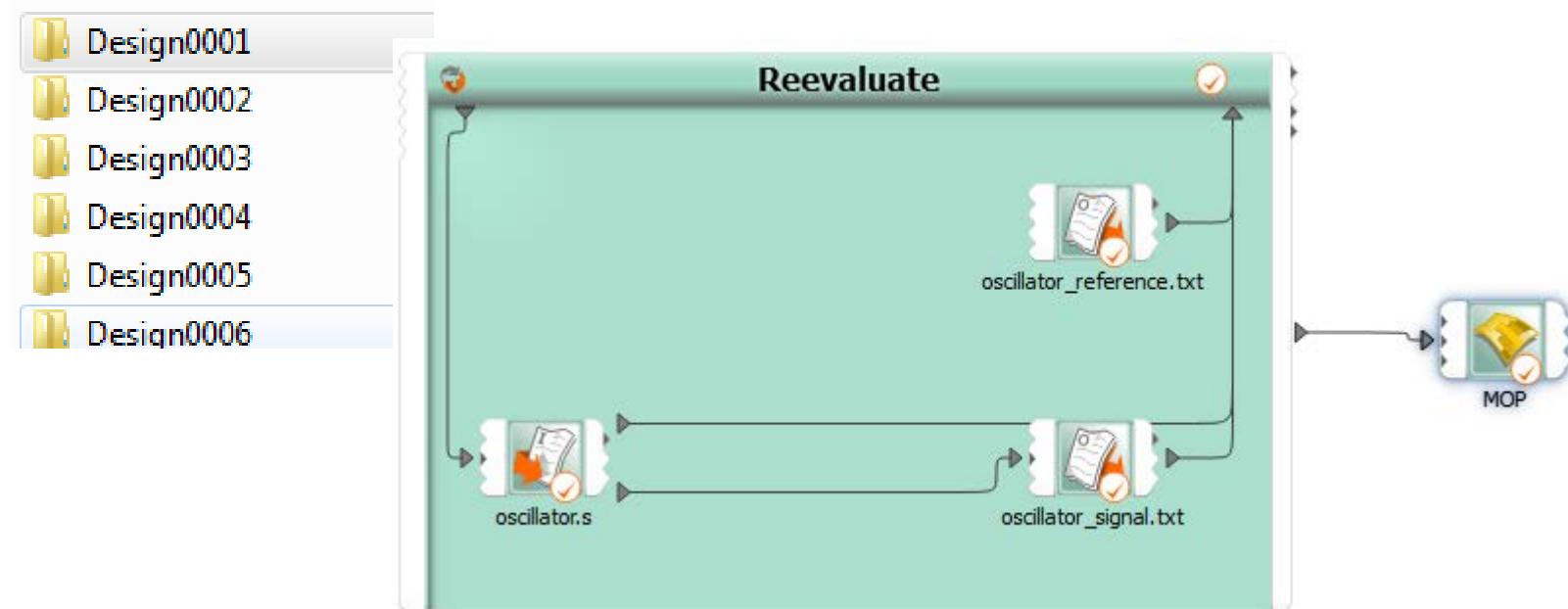
Output slots

Standard slots

Re-evaluate

Read designs from directories

- Inputs and Outputs
- Add Postprocessing
- Merge with previous analysis results



Automate Your Flow



Python scripts for

- Build and modify analysis flow in batch
(*Sensitivity – MOP – Opt on MOP – Validate – Robustness*)
- Automatic plot generation

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

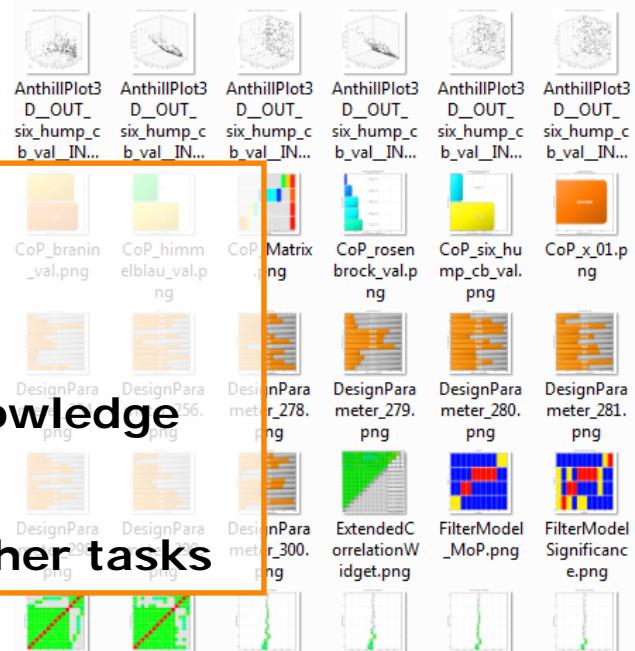
s=find_actor("Sensitivity")
d=s.GetDesigns()
p=s.parameter_manager
o=OSLConvenience(d,p)

#statistic
o.LinearCorrelation(False, False)
o.QuadraticCorrelation(False, False)
o.Filtermodel(False, False, "", "")
o.AnthillPlot3D_OUT_six_hump_cb_val_IN...
o.CloudPlot("area01", "area02")
o.HistoPlot("area01", False, "About optiSLang ;")
o.LinearCorrelationCoefficient()

#optimization
o.DesignParameter(1, raise, "", "")
o.ResponseValues(1, False, "", "")
o.ObjectiveData(1, False, "", "", "")
o.ParameterHistory("area01", Fal:
```

End user

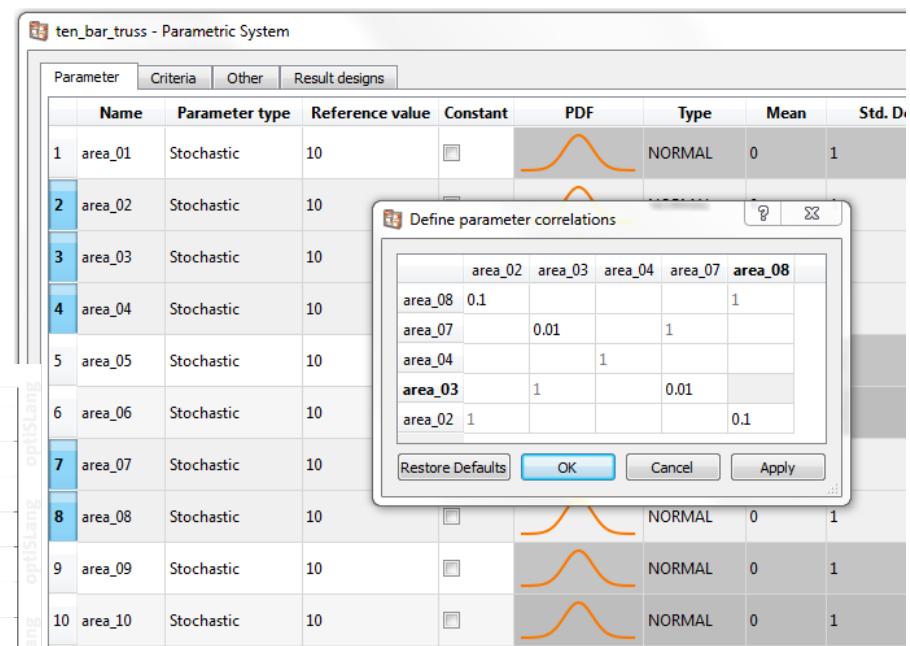
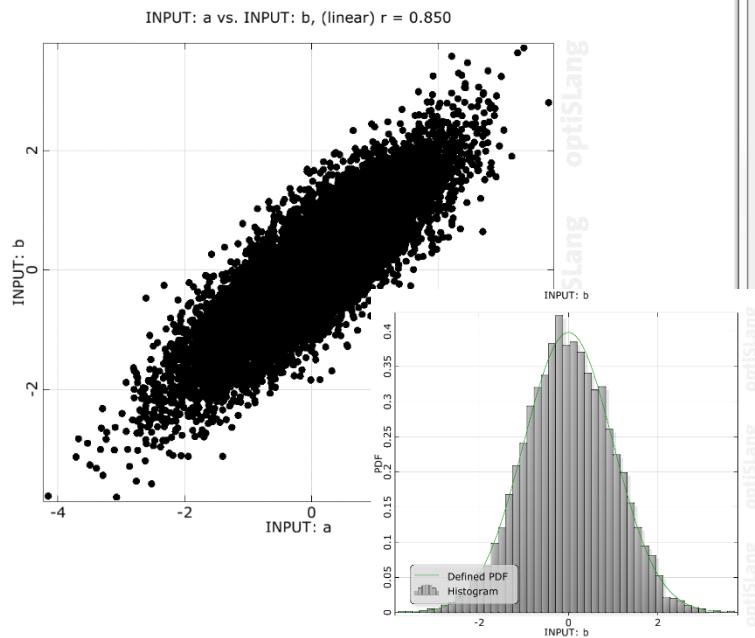
- Saves time
- Uses qualified flow
- Needs no detailed knowledge
- Can spend time for other tasks



Input Correlations

Parametermanager supports correlations

- stochastic and mixed parameters
- for all parameters or a selection
- check validity “on click”



Workbench Node

Use ANSYS WB in your optiSLang flow

- More flexibility (compared to “inside”)
 - e.g. use signals for calibration
- Pre-processing (beta)
- Batch call using parametric pack
- ...

Parameter

depth	3
height	11
radius	35
thickness	1

Ansys Workbench

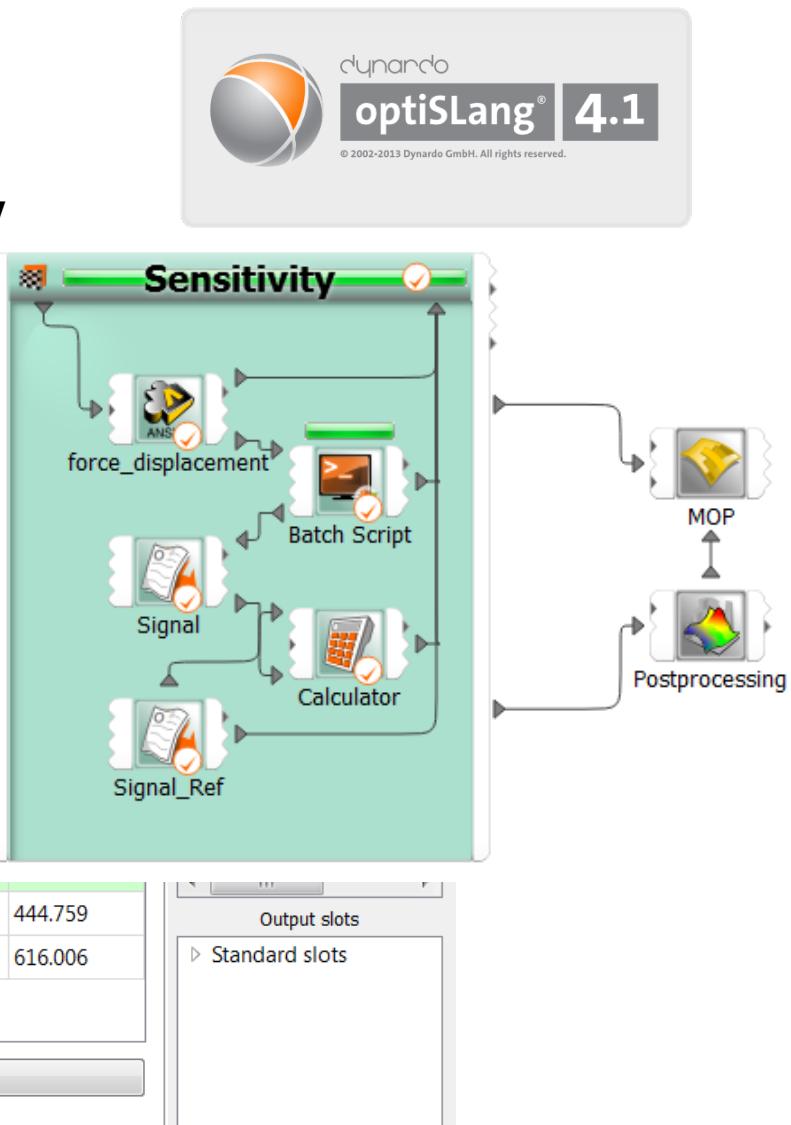
Project and Parameter		Preferences	Output files	Variables
Name	Value			
1 depth	3			1 Geometry_Mass
2 Young_s_Modulus	2000000000000			2 Force_Reaction_Maximum_Y_Axis
3 thickness	1			3 Force_Reaction_Total 444.759
4 radius	35			4 Force_Reaction_Maximum_Total 616.006
5 height	11			

Input slots

Standard slots

Output slots

Standard slots



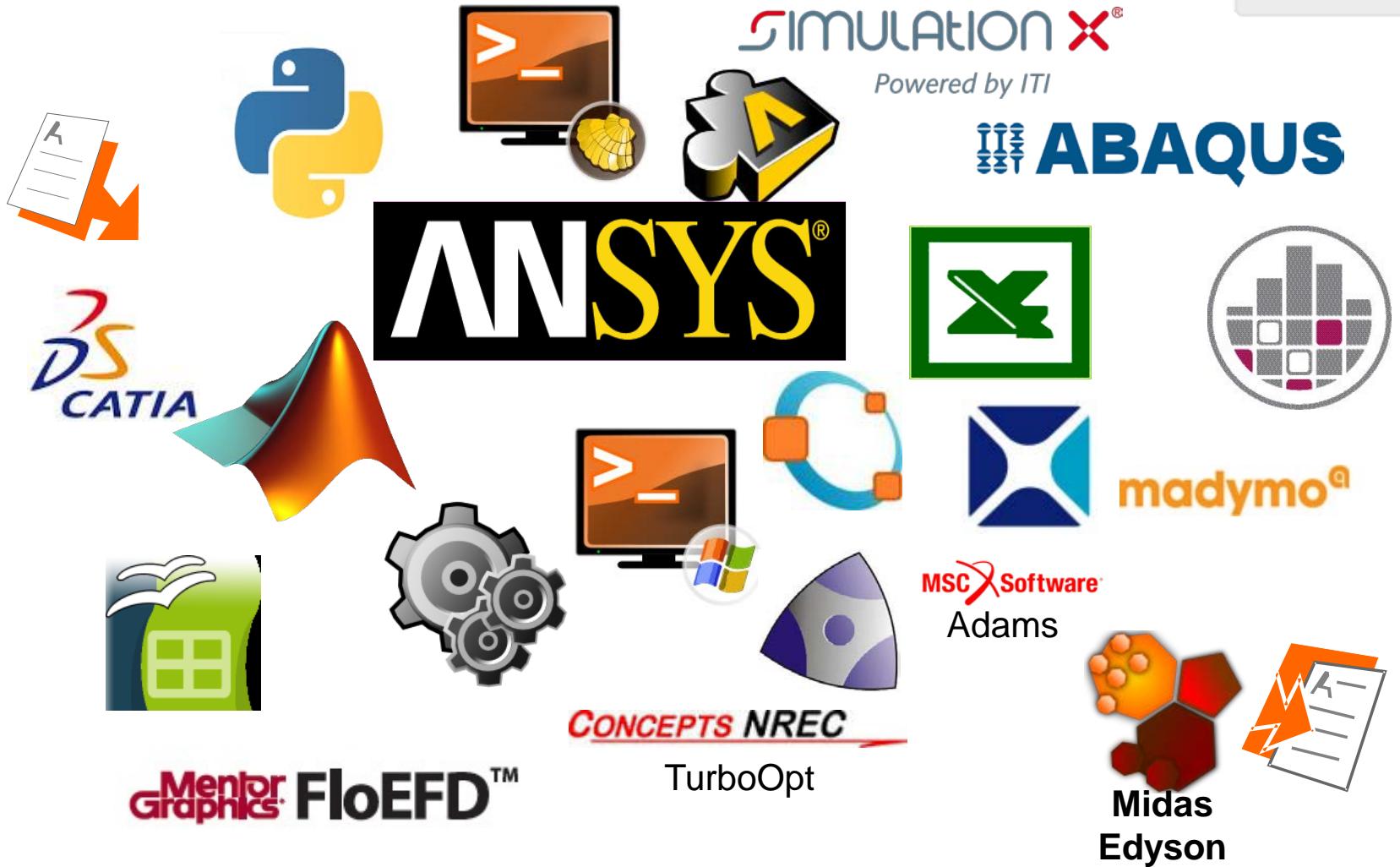
Integrations v4.0



Integrations v4.1



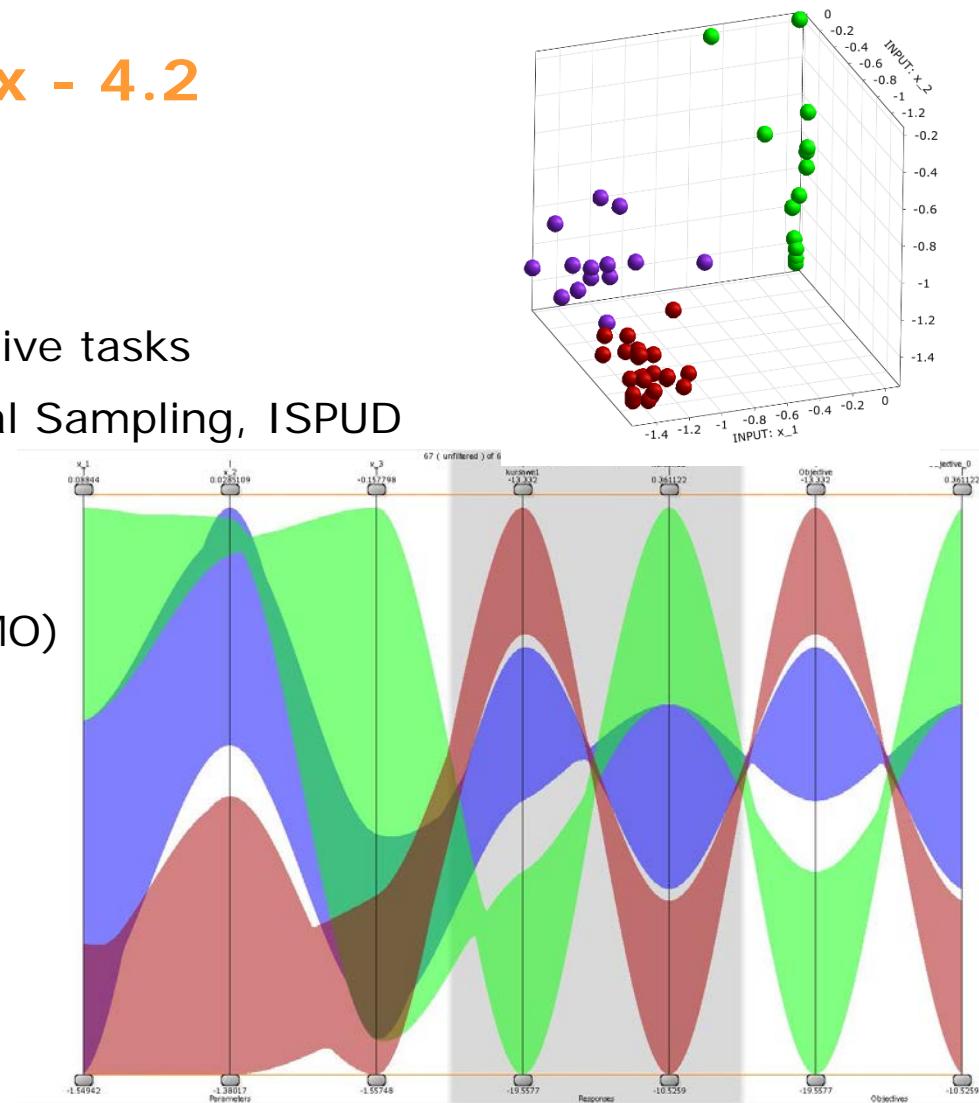
Integrations v4.2



Next Releases: 4.1.x - 4.2

Algorithm

- Cluster (in v4.1: beta)
- More support on multiobjective tasks
- Reliability: ARSM, Directional Sampling, ISPUD
- Probability based RDO
- Performance optimized MOP
- External metamodels (ASCMO)
- Template handling
- ...



Thank you

Need more information?

Visit our stand

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 ...





dynardo

optiSLang®

4.1

© 2002-2013 Dynardo GmbH. All rights reserved.

optiSLang – recent developments