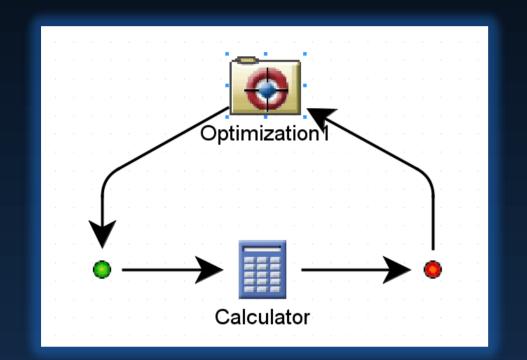
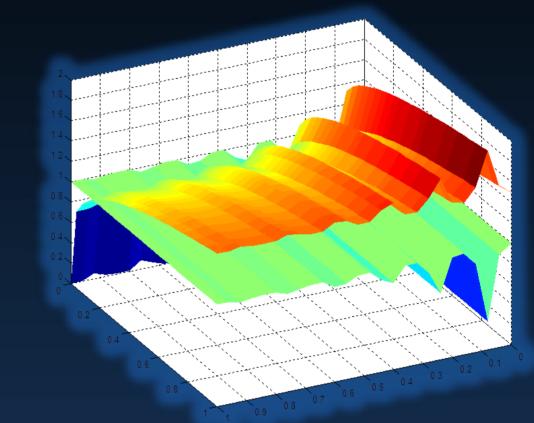


### Dr. Ivan Voutchkov, UTC for Computational Engineering, AACE, Faculty of Engineering and the Environment

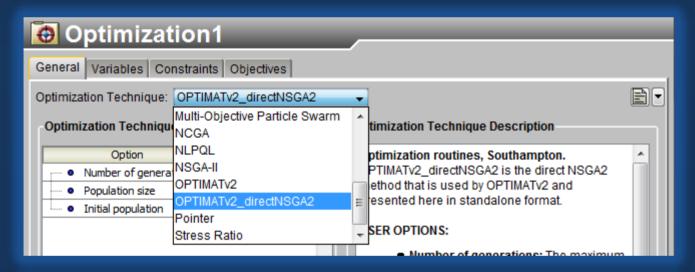
For the past several years, OPTIMATv2 has come a long way to become a tool incorporating significant knowledge and experience in the field of Single and Multiobjective optimisation. It has been known to save considerable amount of time and computing efforts using its dynamically updating RSM strategies. Yet, for problems where calculation time is not an issue, OPTIMATv2 offers its powerful and highly refined Genetic Algorithms as an alternative to the existing Isight tools. The usage and setup is straightforward and the results are often significantly better.



Calculator	_	_	_	_	_		
Enter one or more assignment state	ements: y =	= x + 1; a[i] =	b[j] * 50.0	)			
<pre>f1 = 1-exp(-4*x1)*sin(6*pi( sum = x2+x3+x4+x5+x6+x7+x8+x sum = sum / 9; g = 1+9*(sum^0.25); f2 = g*(1-(f1/g)^2);</pre>							
All Parameters -	sin	cos tan	sqrt	log10	In	All Functions	
Name           • f1           • g           • g           • Optimization1Results           • sum           • x1		<= != 8 9 5 6 2 3 . = ilculate		>= % () e Clear	> &&    ! pi	abs() absMax() absMax(,) absMin(,) absMin(,) absSum() absSum() absSum() abssaxIdx() absmaxIdx()	
Add		liculate		Clear		Add	Import
Allow exceptional values (NaN, Ir	nfinity)						

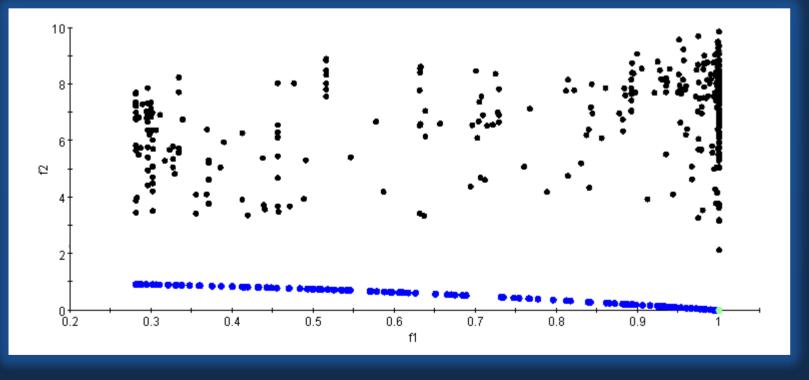


# **OPTIMATv2 NSGA2**

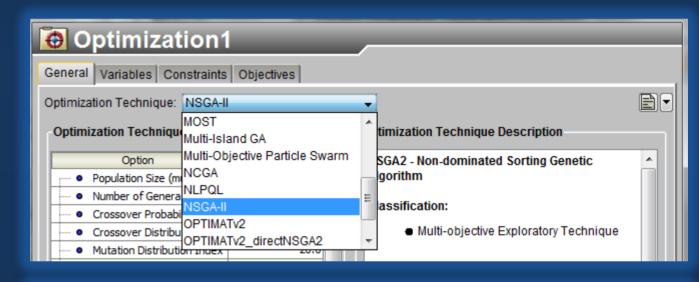


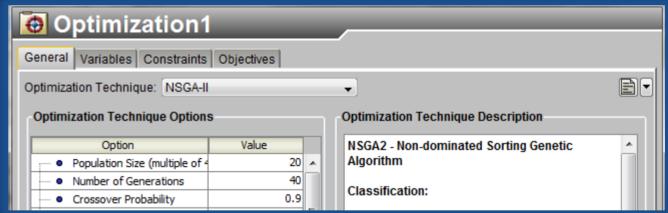
📵 Optimization1				-
General Variables Constraints	Objectives			
Optimization Technique: OPTIMA	Tv2_directNSGA2		▼	ē-
Optimization Technique Option	s		Optimization Technique Description	
Optimization Technique Option Option	<b>s</b> Value		Optimization Technique Description Optimization routines, Southampton.	
		•	Optimization routines, Southampton. OPTIMATv2_directNSGA2 is the direct NSGA2	
Option	Value	^	Optimization routines, Southampton.	

#### After 800 evaluations



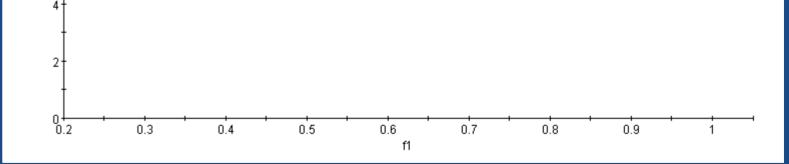
## **ISIGHT NSGA2**





#### After 800 evaluations





**Direct OPTIMATv2 NSGA2** - Highly optimised Genetic Algorithm for both – Single and Multiobjective problems. Uses advanced genetic operators and is available as:

- An Isight optimizer plugin simple usage as shown above
- MATLAB toolbox genetic operators can be called when needed, so that the user is still in control of the function evaluations.

**OPTIMATv2** has been developed under the Strategic Investment in Low-Carbon Engine Technology (SILOET) project, RD6, WP2.6, Task 2.6.3.1

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