Data

Analyzing the Original Data File

Information Contained in the File

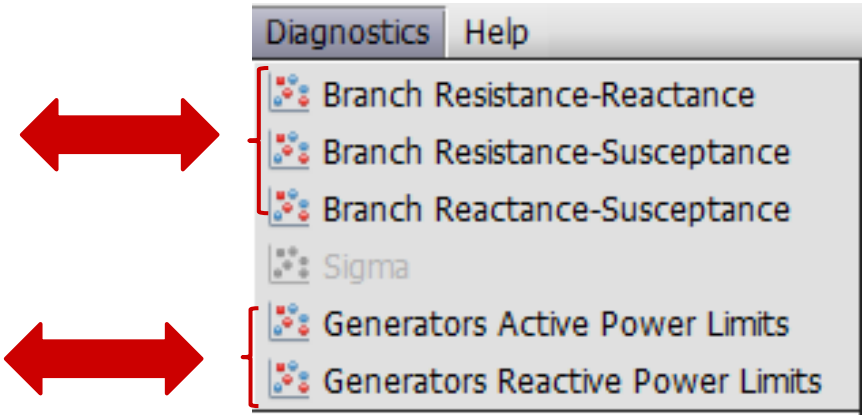
- Network parameters.
  - Branch parameters.
  - Generators limits.
- Voltages and phases from data (previously computed with another program and imported here).
  - Deltas (node flow balance mismatches).
  - Voltages and phases with original.
  - Controls.

Analyzing Network Parameters

In the Diagnostics menu:

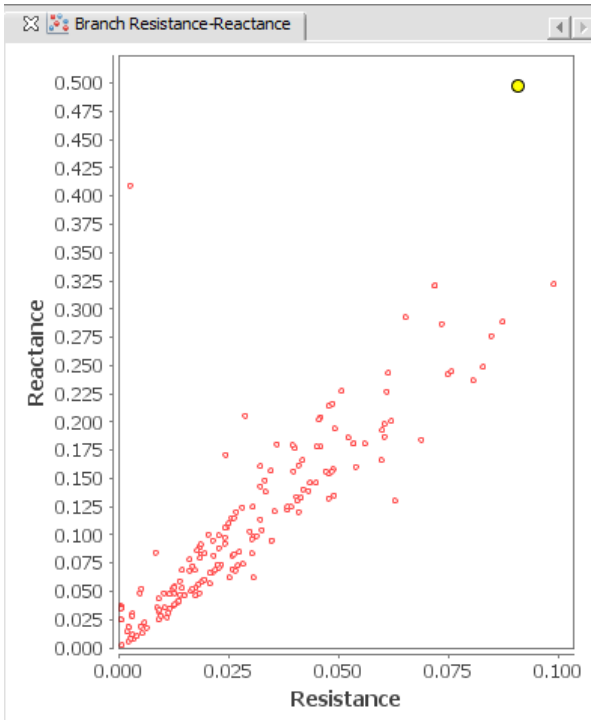
Branch parameters

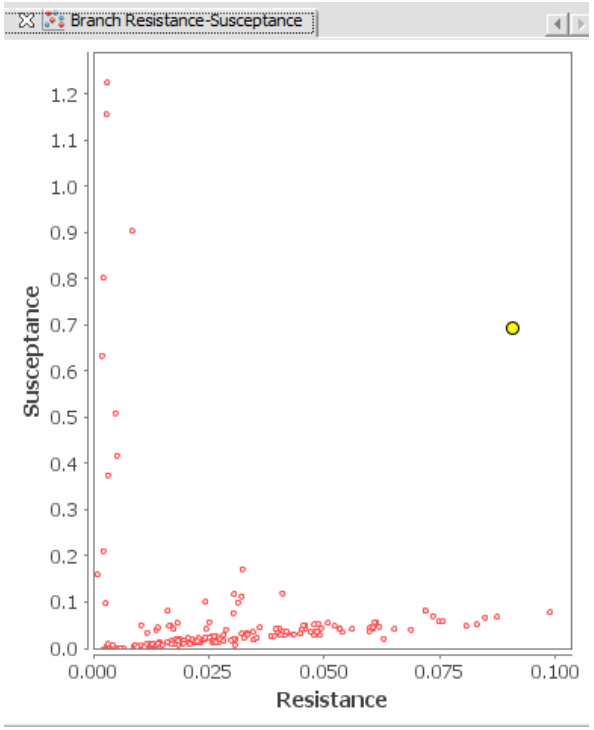
Generator limits

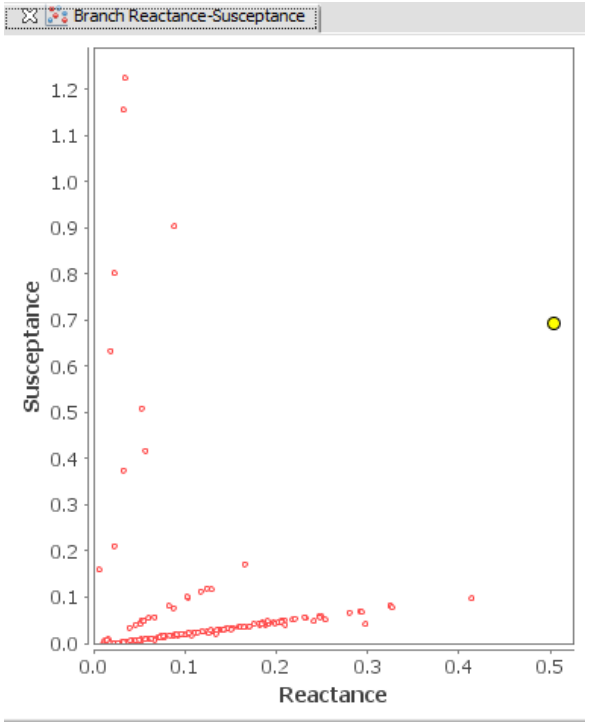


Network Parameters: Branches

Graphically spotting abnormal values: reactance, susceptance, resistance.

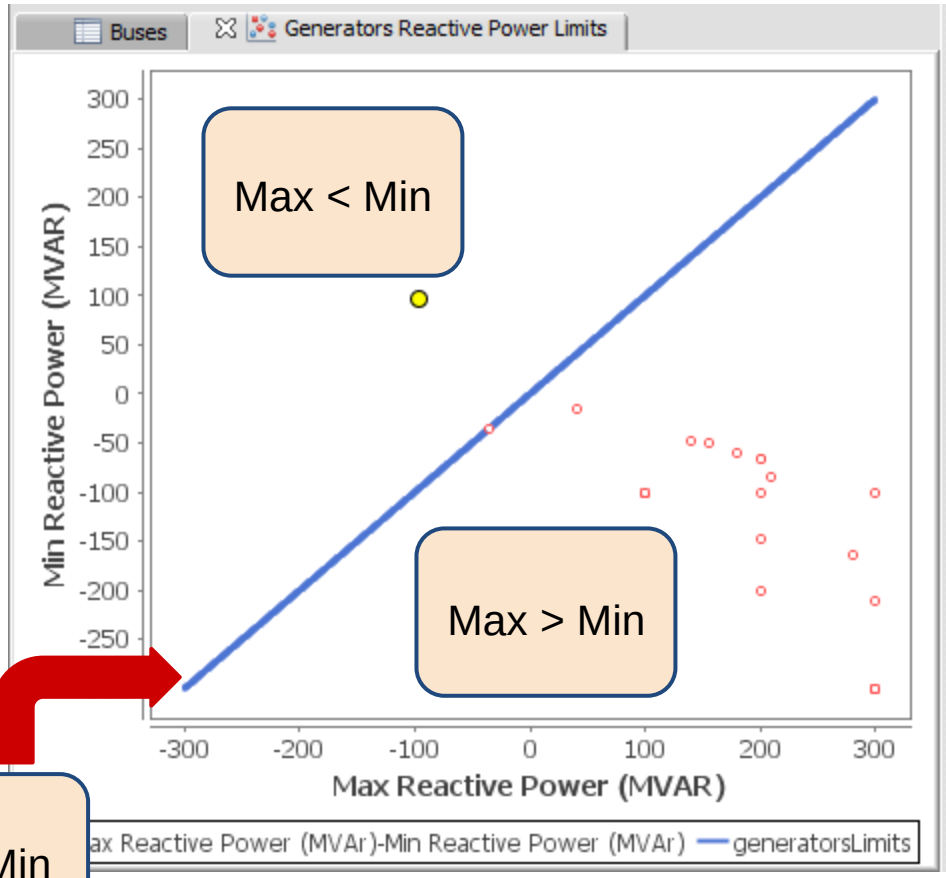






Network Parameters: Generators

Spotting wrong generator limits.



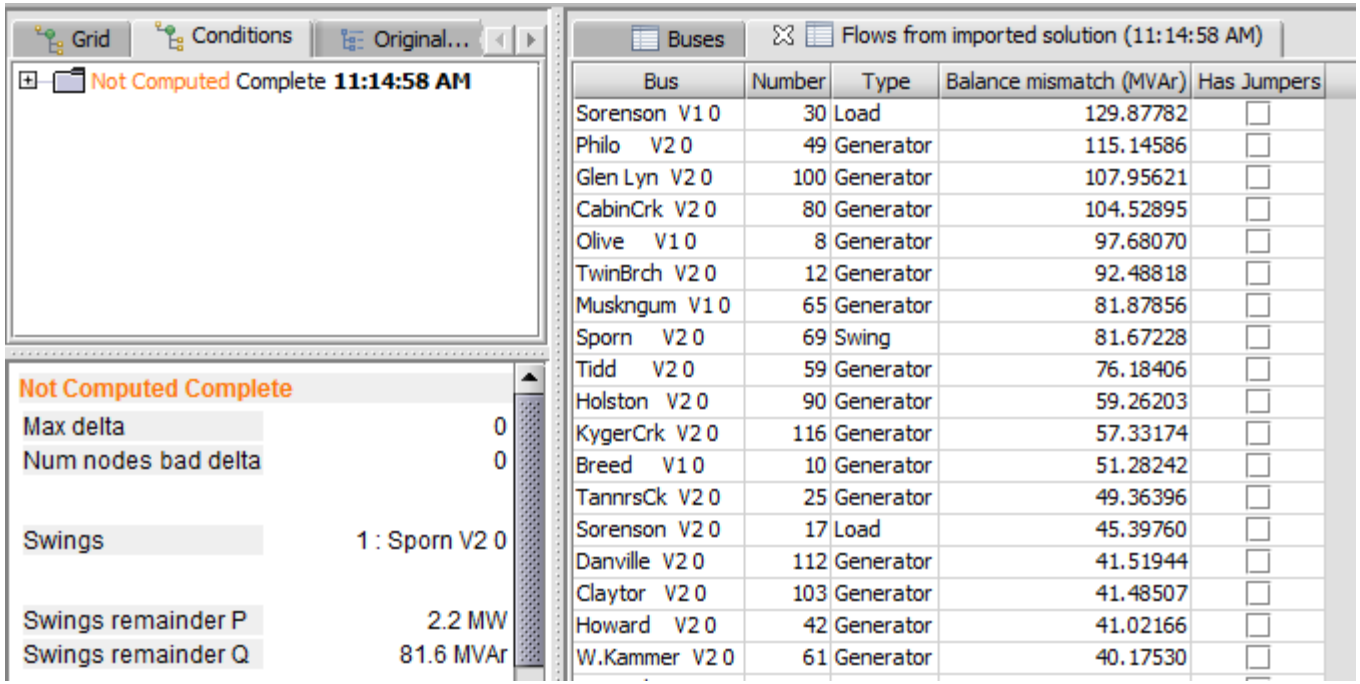
Properties & Condition

Generator	KygerCrk V2 0 Gener...
Num Bus	116
Id	1
Active Power (MW)	-184.00000
Reactive Power (MVAr)	0.00000
Max Active Power (MW)	0.00000
Min Active Power (MW)	0.00000
Max Reactive Power (MVAr)	-100.00000
Min Reactive Power (MVAr)	100.00000
Status	In Service
Regulated Voltage Set Po...	1.00500
Regulated Bus	0
Base MVA	100.00000
Machine Impedance Re (pu)	0.00000
Machine Impedance Im (pu)	0.00000
Step Up Transformer Imp...	0.00000
Step Up Transformer Imp...	0.00000
Step Up Transformer Off ...	0.00000
Regulated Voltage Pct (%)	100.00000
Owners	... 1 element(s)

Mismatches in Original Data

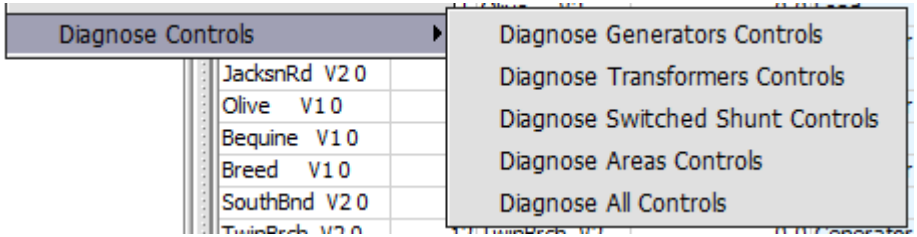
Even if the original data comes from a converged problem, there can be *mismatches* (powerflow residue) at some nodes.

It is not required to run any power flow for this test



Bus	Number	Type	Balance mismatch (MVAr)	Has Jumpers
Sorenson V1 0	30	Load	129.87782	
Philo V2 0	49	Generator	115.14586	
Glen Lyn V2 0	100	Generator	107.95621	
CabinCrk V2 0	80	Generator	104.52895	
Olive V1 0	8	Generator	97.68070	
TwinBrch V2 0	12	Generator	92.48818	
Muskngum V1 0	65	Generator	81.87856	
Sporn V2 0	69	Swing	81.67228	
Tidd V2 0	59	Generator	76.18406	
Holston V2 0	90	Generator	59.26203	
KygerCrk V2 0	116	Generator	57.33174	
Breed V1 0	10	Generator	51.28242	
TannrsCk V2 0	25	Generator	49.36396	
Sorenson V2 0	17	Load	45.39760	
Danville V2 0	112	Generator	41.51944	
Claytor V2 0	103	Generator	41.48507	
Howard V2 0	42	Generator	41.02166	
W.Kammer V2 0	61	Generator	40.17530	

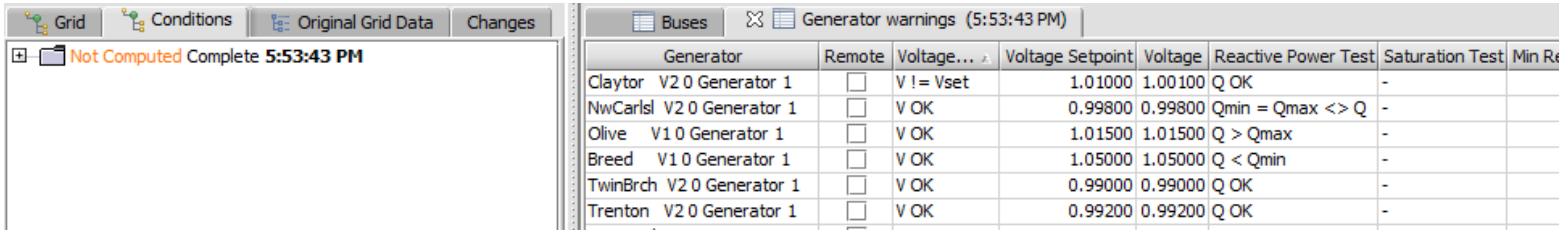
Diagnosing of Controls

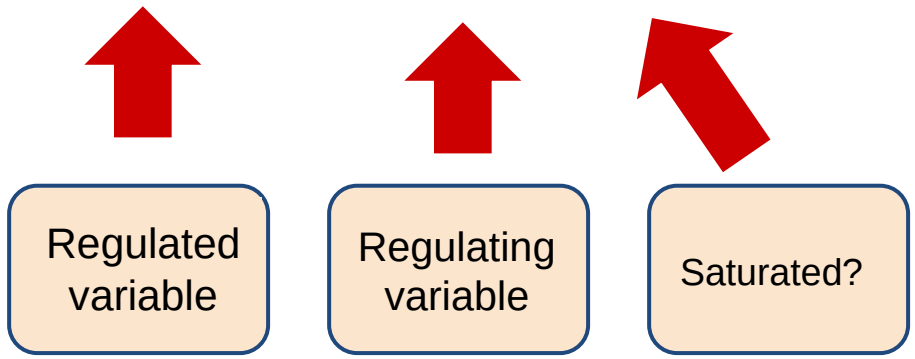


We can check if a control involving generators, transformers, switched shunts, or area transfers has been actually enforced or not in the original file.

Diagnosing Controls

A control is satisfied if the variable being regulated (a.k.a. the setpoint) takes the correct value, and the regulating variable (the resource) is within limits.





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