Lecture 7:
GOSET GUI

GOSET GUI

- Easy and intuitive access to GOSET for any level of users
- Ability to stop and continue the simulation at any time
- Ability to store and retrieve parameter settings
- Support for storing and retrieving project

Main Window

Menu bar

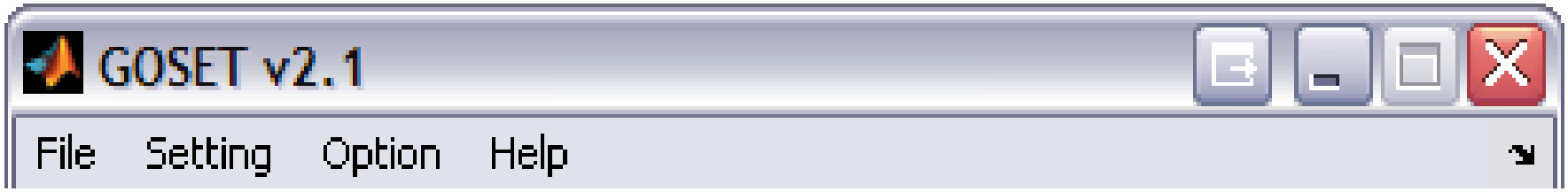
Evolution Status

Output Report

Start \ Stop \ Continue Buttons

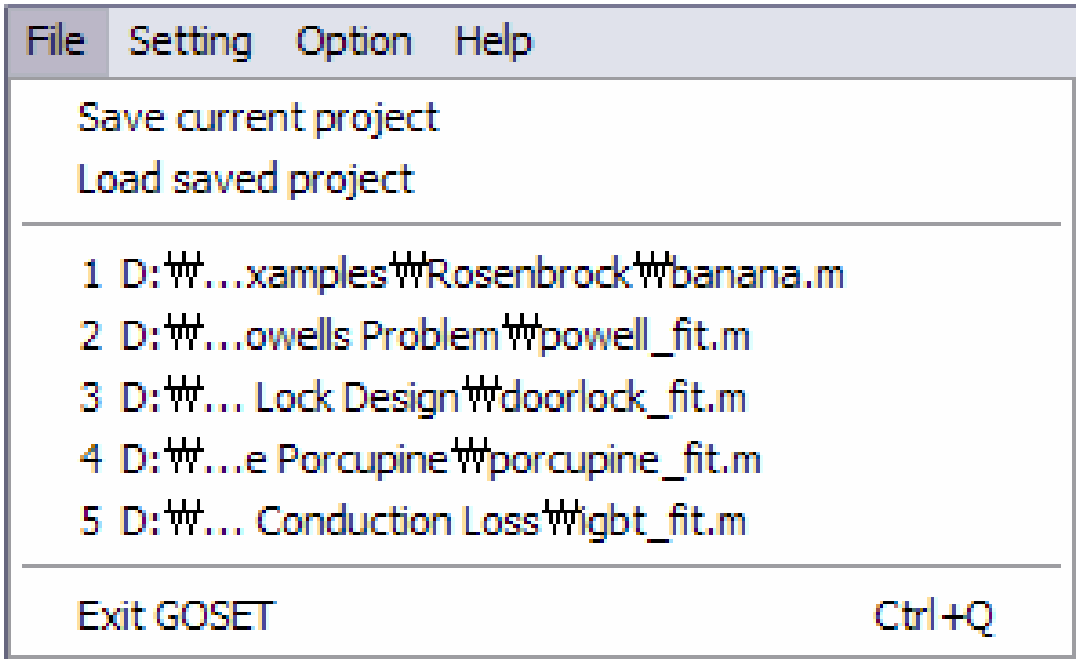
Main menu

Menu Bar



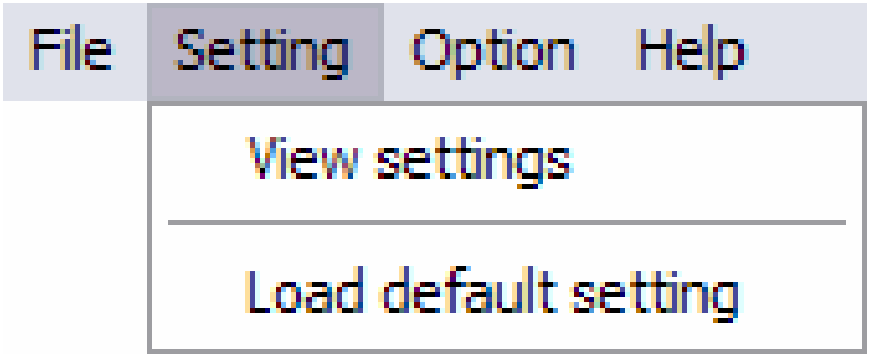
- File
- Setting
- Option
- Help

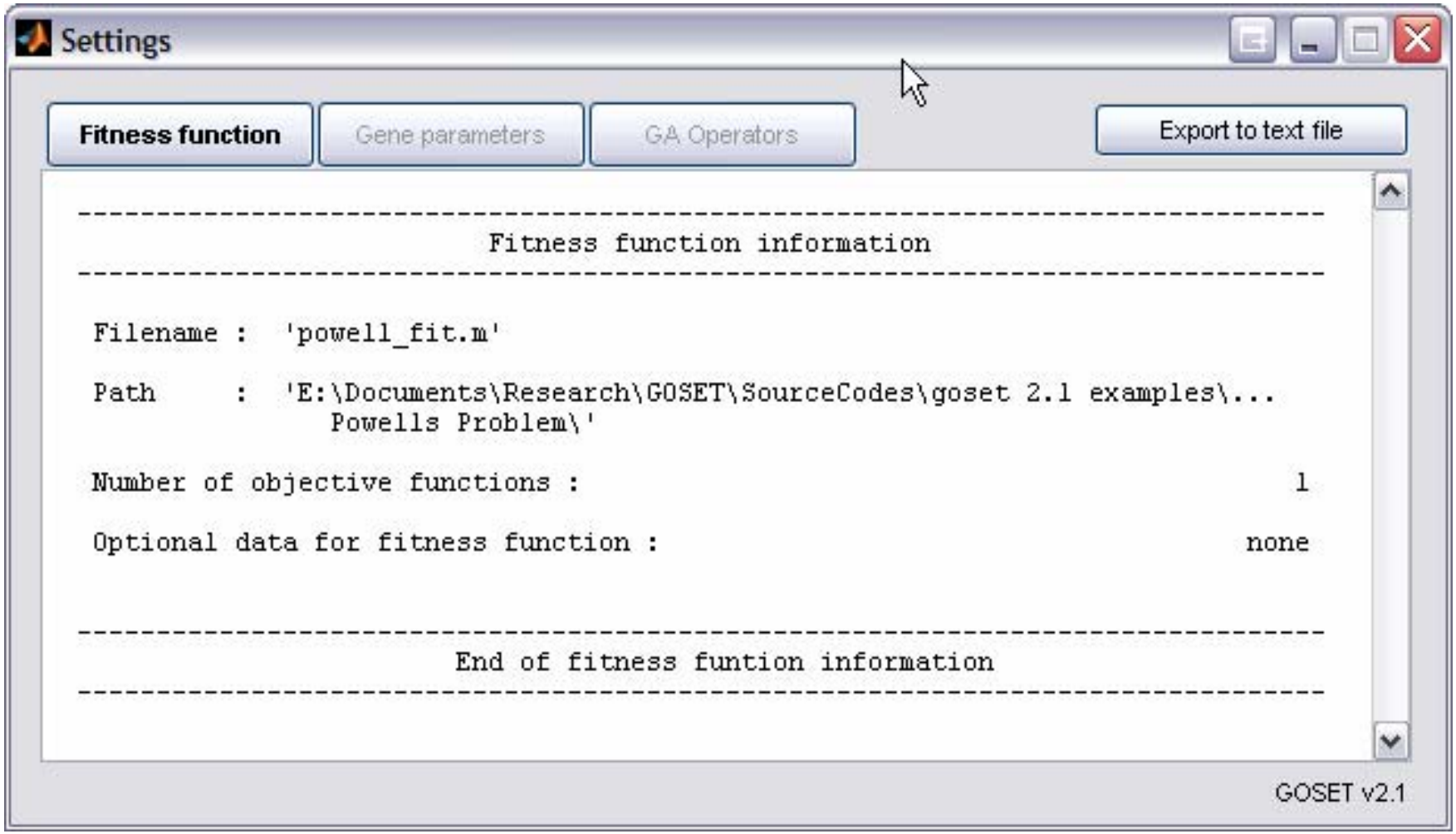
- File

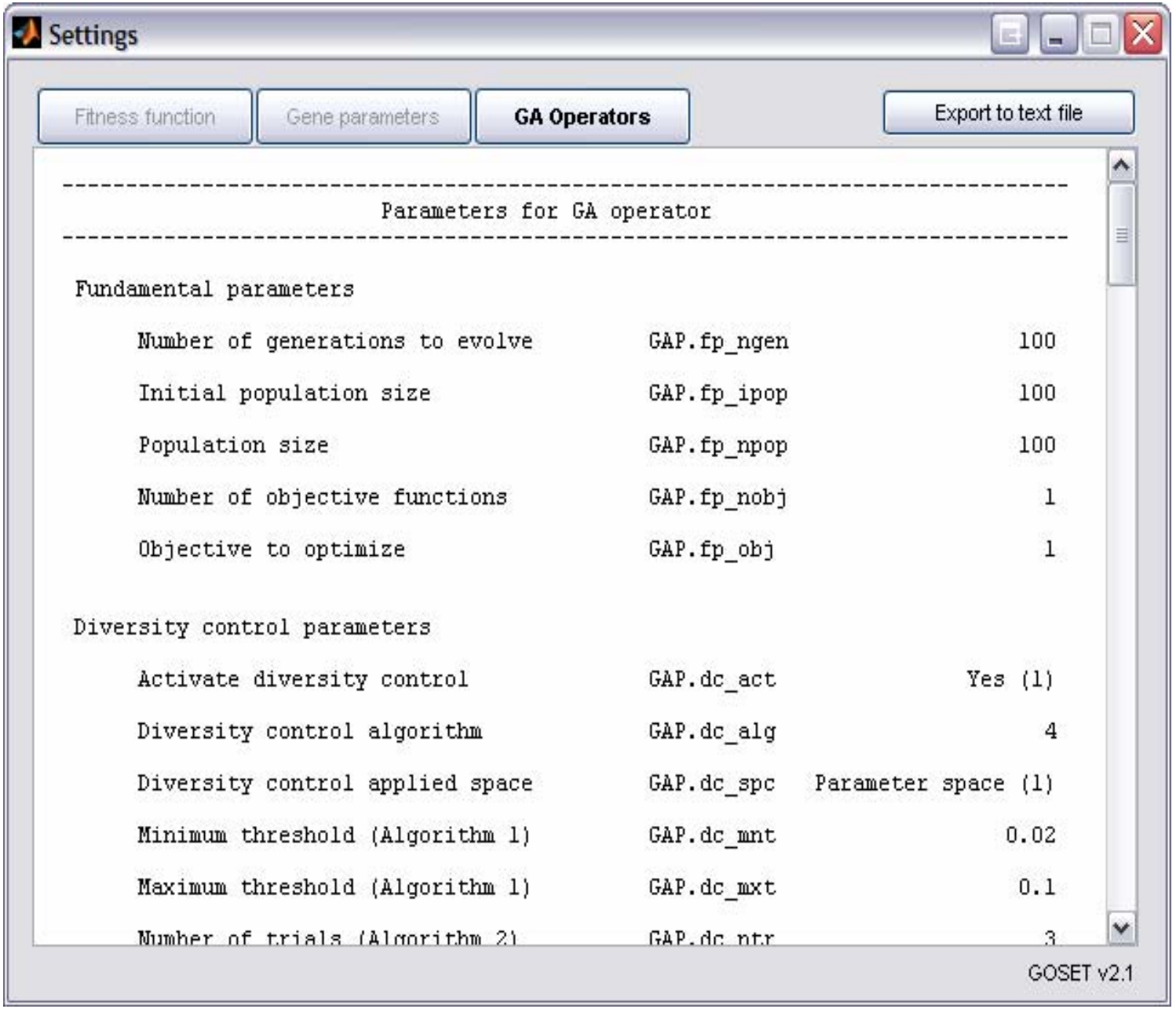


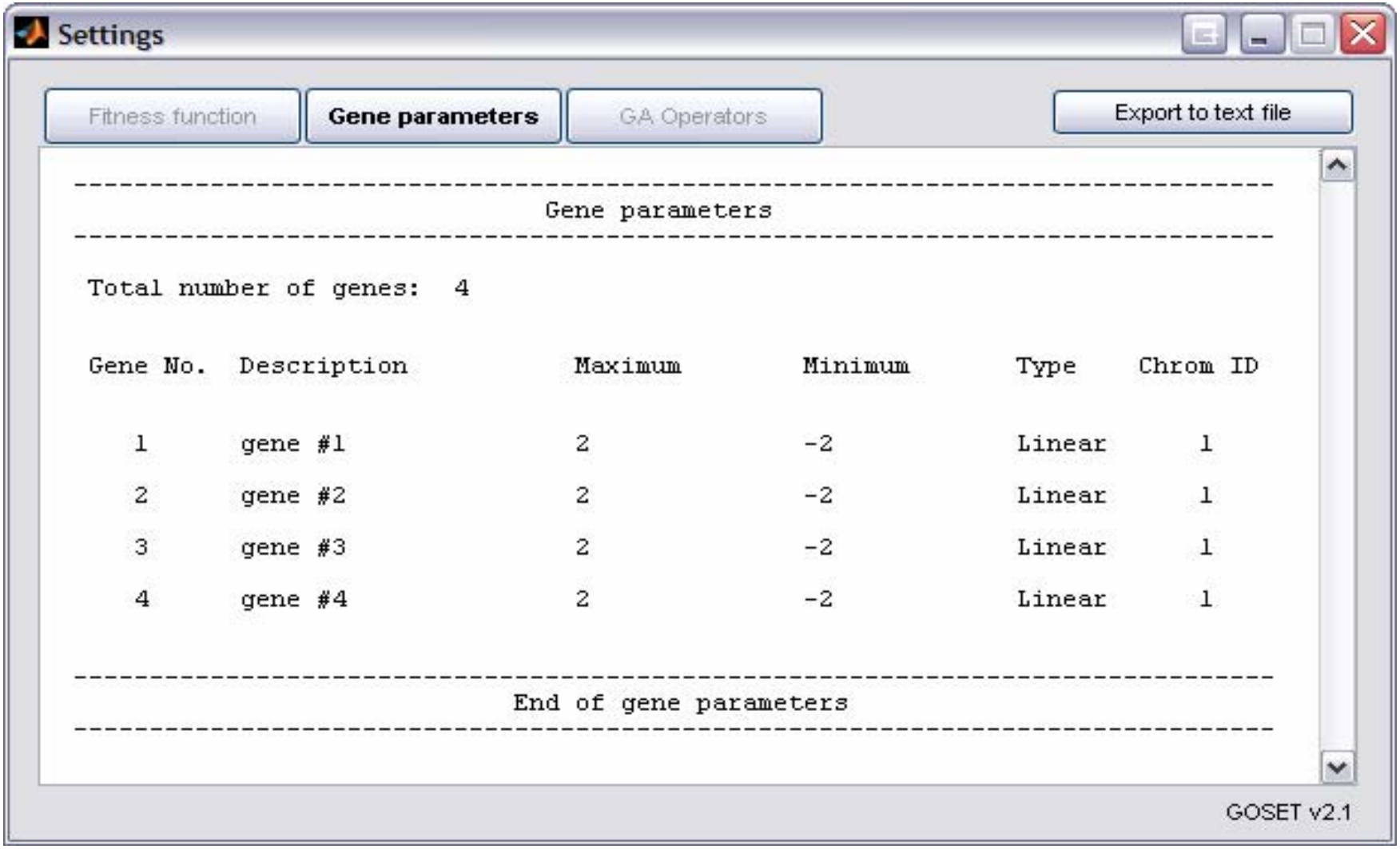
  - **Save current project**: store all the information of current generation including the population information and the parameters of genetic operators
  - **Load saved project**: Load a previously saved project
  - **Recent files**: Five most recently accessed fitness function files are listed.
  - **Exit GOSET**: Close GOSET GUI. The shortcut is Ctrl+Q

- Setting
  - **View setting**: Display the fitness function information, gene parameters of GA operators

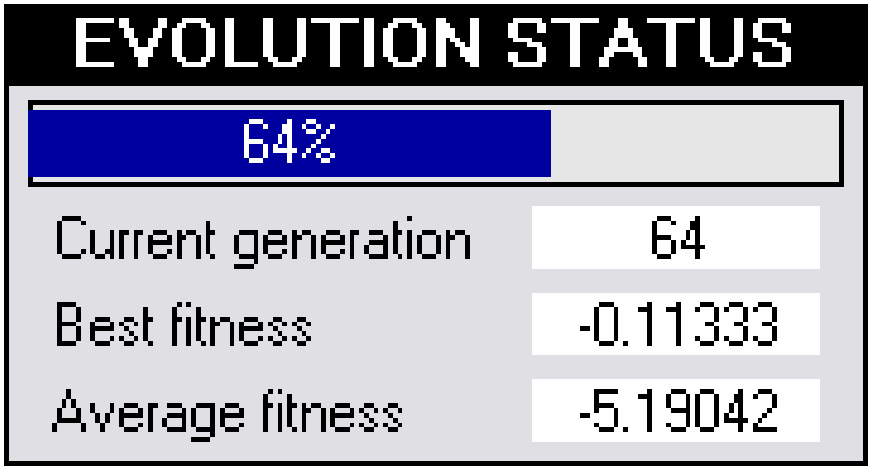



Settings
Fitness function
Gene parameters
GA Operators
Export to text file
Fitness function information
Filename : 'powell_fit.m'
Path : 'E:\Documents\Research\GOSET\SourceCodes\goset 2.1 examples\... Powells Problem\'
Number of objective functions : 1
Optional data for fitness function : none
End of fitness funtion information
GOSET v2.1


Settings
Fitness function
Gene parameters
GA Operators
Export to text file
Parameters for GA operator
Fundamental parameters
Number of generations to evolve GAP.fp_ngen 100
Initial population size GAP.fp_ipop 100
Population size GAP.fp_npop 100
Number of objective functions GAP.fp_nobj 1
Objective to optimize GAP.fp_obj 1
Diversity control parameters
Activate diversity control GAP.dc_act Yes (1)
Diversity control algorithm GAP.dc_alg 4
Diversity control applied space GAP.dc_spc Parameter space (1)
Minimum threshold (Algorithm 1) GAP.dc_mnt 0.02
Maximum threshold (Algorithm 1) GAP.dc_mxt 0.1
Number of trials (Algorithm 2) GAP.dc_ntr 3
GOSET v2.1

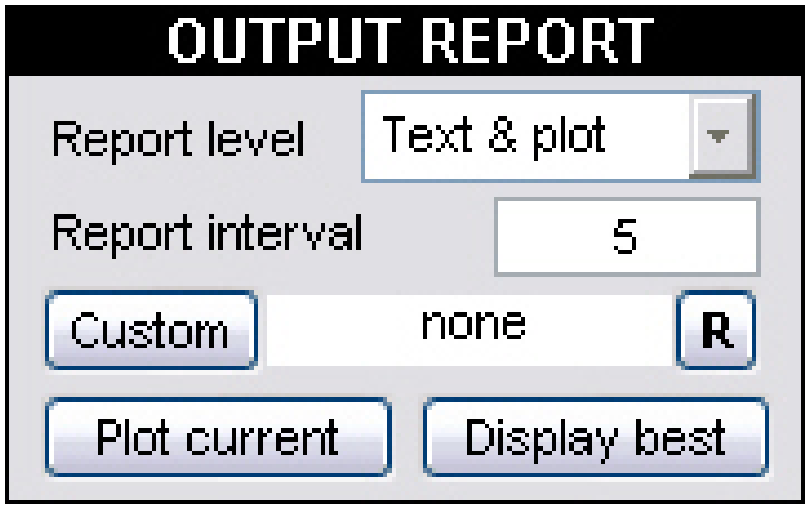

Settings
Fitness function
Gene parameters
GA Operators
Export to text file
Gene parameters
Total number of genes: 4
Gene No. Description Maximum Minimum Type Chrom ID
1 gene #1 2 -2 Linear 1
2 gene #2 2 -2 Linear 1
3 gene #3 2 -2 Linear 1
4 gene #4 2 -2 Linear 1
End of gene parameters
GOSET v2.1

Evolution Status



- Shows generation number, the best fitness value, and the average fitness value
- The progress bar visualizes the evolution process

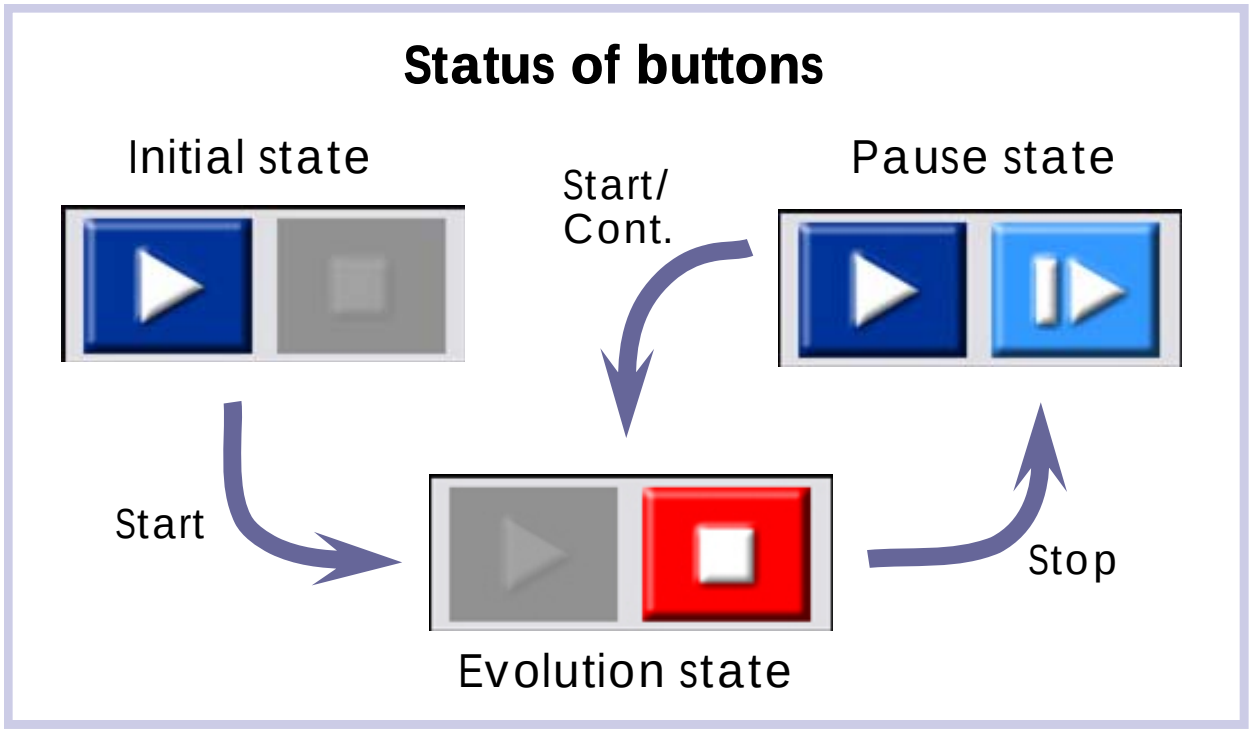
Output Report



- Report level:
  - None
  - Text only
  - Text and plot
- Report interval
- Report computation time:
- Plot current: the plot of current generation
- Display best: show the actual value of the best individual

Start/Stop/Continue Buttons

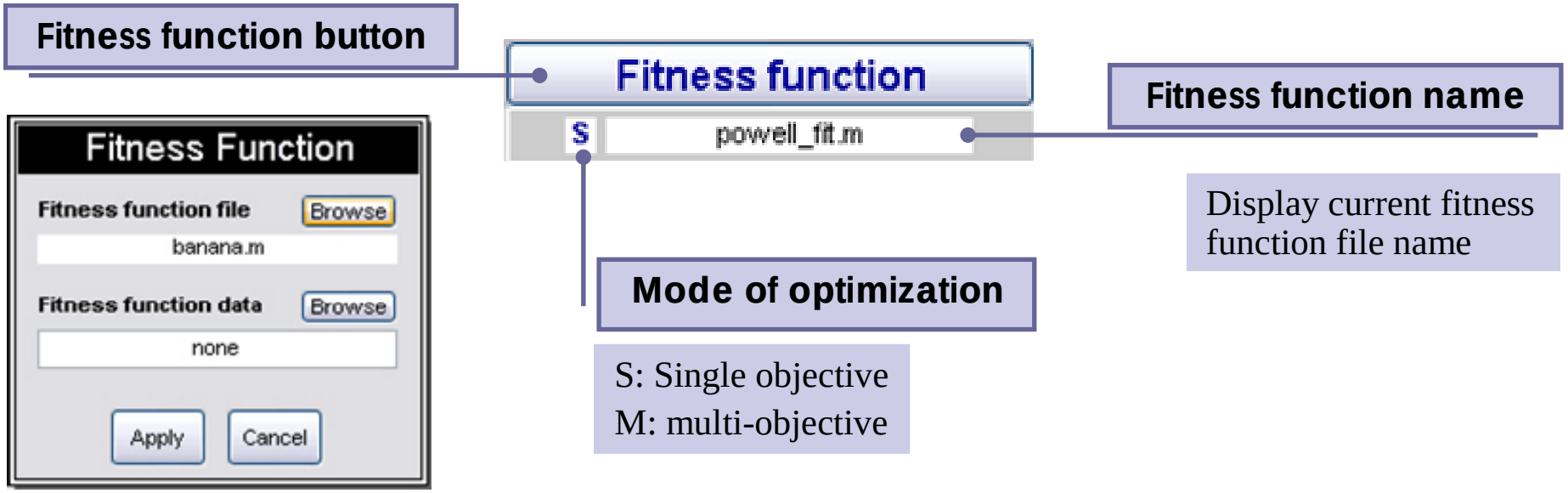
- Start/Stop/Continue buttons are enabled and disabled depending on the situation



- If start button pressed in pause state, all data is lost and evolution starts from generation 1

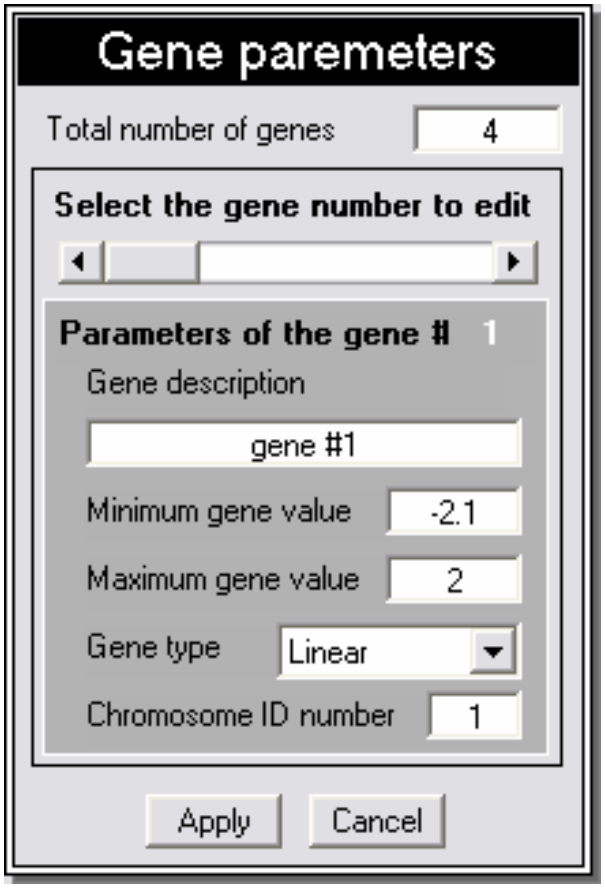
Main Menu

- The fitness function information, the definition of the genes, plotting parameters and the genetic operator parameters are defined
- **Fitness function**



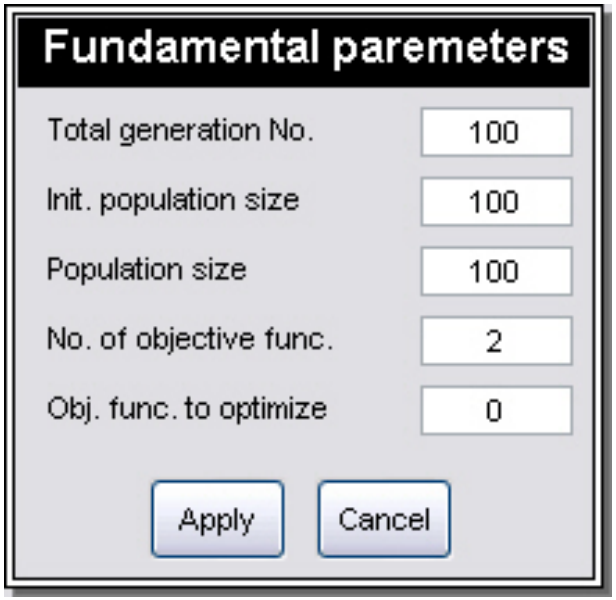
Gene parameters

- The total number of genes, their description, maximum values, minimum values, gene types, and the chromosome ID are defined.



Fundamental parameters

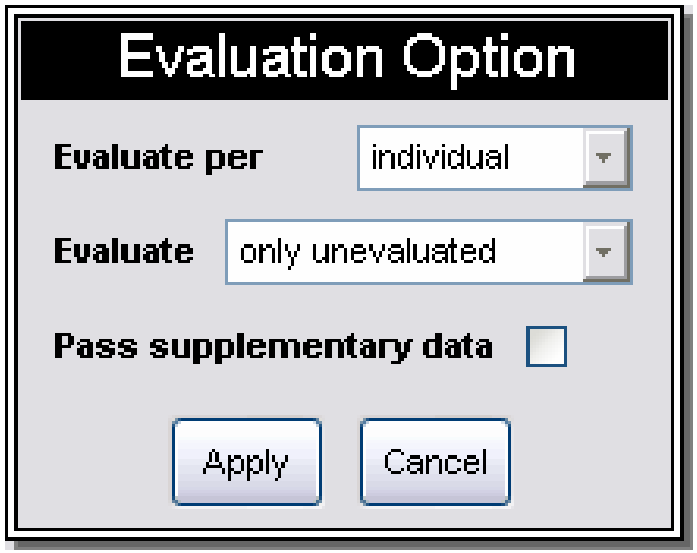
- The total number of generations for evolution, the initial population size, the regular population size and the objective function number for the optimization are defined



- For multi-objective optimization, use 0 for the optimization function to optimize

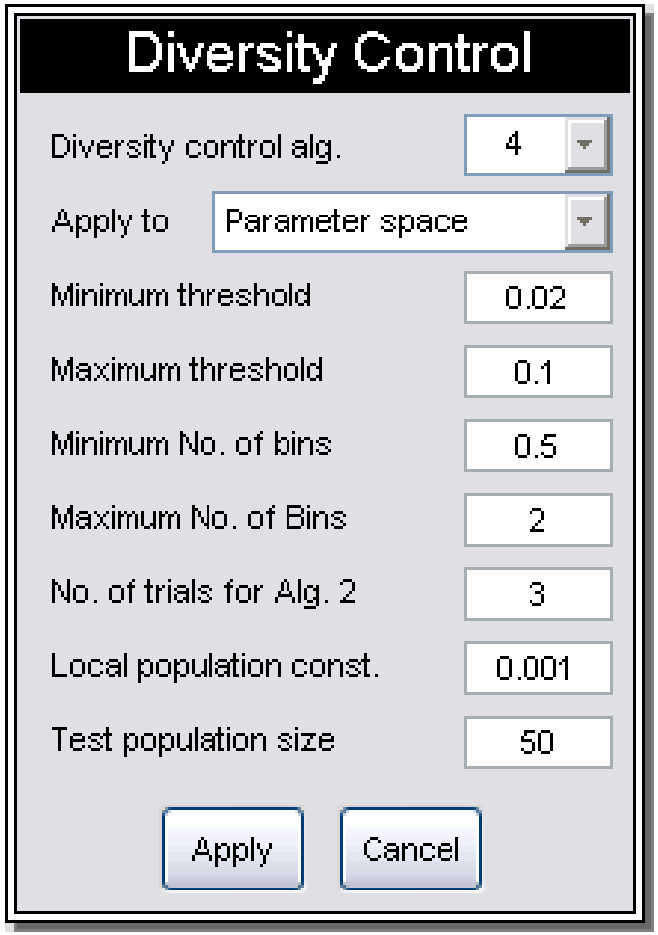
Evaluation option

- The user can choose whether to evaluate all the individuals or to evaluate only the unevaluated individuals



Diversity control

- Diversity control can be activated or deactivated



- **Elitism**
  - Elitism has ON/OFF toggle switch to activate or deactivate it