Important Tips When Meeting Problems

This document lists some questions from the user's feedback. We suggest referring to this document before contacting us when ADE 1.0 shows problems. We will try our best to update this document according to the latest user's feedback.

Please first make sure that you have the required MATLAB Toolboxes: MATLAB Machine Learning and Statistics Toolbox, MATLAB Optimization Toolbox and MATLAB Parallel Computation Toolbox (if you use parallel computation).

1. Simulation Not Running

If the simulation is not running, please do the following quick checks:

- ***Variable Name Conflict***
  - For optimization problems involving CST models, it is strongly recommended that the user double-checks the parameter list of the CST model to ensure consistency with the variable names being specified in the ADE 1.0 to avoid a conflict in the variable names. (Please see section 4.1 in the users' guide)

- ***CST Timeout***
  - The CST Timeout is recommended to be 2-3 times the approximate duration (in seconds) for the simulation runtime of your antenna model in the CST Microwave Studio. Please note that if a short timeout duration is set, the CST Microwave Studio simulation pool will timeout too early hampering the optimization process. (Please see section 4.1 in the users' guide)

- ***CST Installation Path***
  - The CST's executable file (CST DESIGN ENVIRONMENT.exe) from your PC's directory must be selected and specified to be the installation path in your CST simulation settings. (Please see section 4.1 in the users' guide)

- ***CST Output***
  - Before executing ADE 1.0, the user needs to check and confirm the data format for CST outputs or results in the CST Microwave Studio. The storage mode for CST outputs or results must be set to ASCII and SQL. (Please see section 4.1 in the users' guide)

- ***Save Button***

  - It is strongly recommended for the user to always use the save button at every stage of the setting process to keep the software updated with the latest defined inputs or progress.

2. Optimization Results Not Good

If optimization results are not good, please do the following quick checks:

- ***Inspection of the Population Diversity and Convergence Trend***

  - If the population diversity is still very high, the optimization process should be continued until the diversity is low enough and with a clear convergence trend. (Please see sections 4.1 and 4.2 in the users' guide)

- ***Inspection of the Variable Ranges***

  - If some variable range is too small, please kindly increase the range by editing the design variables. In particular, if you find that the obtained optimal design reaches or near the boundary of the search ranges of some design variables, it is highly likely that the inappropriate search range is the reason to cause optimization failure. (Please see section 4.1 in the users' guide)

- ***Correct use of PAS or ISS***

  - PAS and ISS are different methods for the SADEA optimizer to construct surrogate models. When the optimal region is very narrow (such as microwave filter or dielectric resonator-based devices), only ISS is feasible. If the PAS-based result is not good, trying ISS is recommended, although the surrogate modeling time is longer.

3. CST Closes the Programme and Sometimes Even Closes MATLAB

Sometimes, the bugs of CST may close the MATLAB command window. In this case, please restart MATLAB, load ADE 1.0 and then use "Open" in the main menu. Select "project.mat" and all the previous data will be loaded. The user can start again from the broken point. (Please see Section 4.1 and Section 4.2 in the users' guide).