Module 9.3 – **Parallel Models for Simulation of Acentric Complex Phenomena**

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Off-line CA Engine Execution

The CA Engine can be invoked outside the CAMELot environment. Limited functionality is supported. In the following discussion we assume that the user has built the CA executable either using the CAMELot environment or using the Makefile.batch makefile available with the distribution.

The command-line arguments available to the user are as follows:

```
-l<no_of_state> <filename>
```

Initialise substate `<no_of_substate>` from `<filename>`. This suggests that the user knows the substate index allocation done transparently in the CARPET parser. These indices can be deduced from the state CARPET statement, as they are parsed sequentially, i.e. the first substate given is indexed 0, the second 1 etc.

Off-line CA Engine Execution

`-0`

This initialises all substates to 0

`-n<num_gens>`

Set the number of generations to be run to `<num_gens>`

`-s<save_step> <filename>`

Enable periodic project save to files with basename `<filename>` (according to the conventions for saving a project) with period `<save_step>`

Off-line CA Engine Execution

`-t<time_step> <filename>`

Enable periodic timing statistics output to file `<filename>` with period `<time_step>`. If `<time_step>` equals zero, then the results are output at the end of the simulation. If `<filename>` is set to -, then the results are written to the standard output of the terminal window where CAMELot was started.

`<filename>`

Initialise the project from `<filename>`. This has no parameter to identify it and it must be the last argument. If -l or -0 have been specified it is ignored.

Camelot Batch Script `life.sh`

```
#Parallel execution

mpirun -np 16 ../life/life -l0 random_life.cmt
              -s100 prova
              -n100


#Sequential execution

../life/life -l0 random_life.cmt -s100 prova -n100
```

Camelot Batch Script `sciara.sh`

```
#Parallel execution
mpirun -np 16 ../sciara/sciara
-l0 ../basin/basin_219x209.cmt
-l8 ../basin/vent_50_185.cmt
-l9 ../basin/real_219x209.cmt
-n5760


#Sequential execution
../sciara/sciara
-l0 ../basin/basin_219x209.cmt
-l8 ../basin/vent_50_185.cmt
-l9 ../basin/real_219x209.cmt
-n5760
```