

Preparation of the files to submit : Sebilliau's cavity

The files to be submitted must be prepared in the same format as the DNS database, i.e., column files in ascii format. Quantities must be made non-dimensional as in the database, as described in the file [Presentation_of_the_square_cavity_DNS_database.pdf](#)

Please follow the naming convention. Submit all the files in a tar or zip archive. If you submit results obtained with different models, please submit them in different archives or in different directories in the archive. Please also join by email a very short description of what is used for each series of results (typically the name of the model).

The first line of each file must indicate the variables given in each column, as in the database. For instance, the head of the file Basic_stat_X_0p1.dat should look like:

```
# y y+ U V uu vv ww uv T TT uT vT k TSR eps epsTT
0.0000000000000000 0.0000000000000000 1.4874068312870852E-012 0.0000000000000000 1.1955675254980799E-015 0.0000000000000000 4.2837048190520239E-016
1.0520179138462370E-004 0.97235302659218281 1.9078151364280291E-002 -1.5887033364247141E-006 6.3881027327748192E-006 1.4226502670504747E-009 5.853035082368431
...
```

Note the character “#” at the beginning of the first line. The columns are just separated by tabulations or spaces. The number of points extracted along the profile is to your convenience. Due to the symmetries of the test case, only the hot side is necessary (from $y = 0$ to $y = 0.5$), but you can provide the full profile, it doesn't matter.

Note that the models do not necessarily give all the quantities. For example, for eddy viscosity models, some can be reconstructed (Reynolds stresses, turbulent heat fluxes, ε in a $k-\omega$ model), but others cannot (temperature variance if its equation is not solved). If the quantity is not available, please leave a column filled with zeros, it will facilitate the automatic treatment of the results.

Here is the list of expected files:

- Mean horizontal profiles at 9 locations, ranging from $x = 0.1$ to $x = 0.9$:

- Basic_stat_X_0p1.dat
- Basic_stat_X_0p2.dat
- Basic_stat_X_0p3.dat
- Basic_stat_X_0p4.dat
- Basic_stat_X_0p5.dat

Basic_stat_X_0p6.dat

Basic_stat_X_0p7.dat

Basic_stat_X_0p8.dat

Basic_stat_X_0p9.dat

-Mean vertical profile at the mid width:

Data_midwidth.dat

- Nusselt number (due to symmetries, cold and bottom walls are not required):

Nu_hot.dat

Nu_top.dat

- Wall shear stress (due to symmetries, cold and bottom walls are not required):

WSS_hot.dat

WSS_top.dat

Very motivated participants are welcome to compute the budgets for comparison with the database, although it is not at all compulsory.