

1.függelék

A teljes grid.txt fájl tartalma így nézett ki minden modellfuttatás alkalmával (számos beállítási lehetőségre, paraméterre nem volt szükség ehhez a modellezéshez, ezek 0 értékkel szerepelnek):

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----- Control File for Flowsquare ver 4.0 (Use SI Unit) -----
----- General Control Data -----
01:cmode      0 // Simulation mode, 0:non-reac, 1:premixed, 2:non-premixed, 3:Euler, 4:analysis
02:nx        500 // No. grid points
03:ny        500 // No. grid points
04:lx        5 // Domain x-size
05:ly        5 // Domain y-size
06:sts       0 // Start time step (new simulation starts from sts=0)
07:latts     1500 // End time step
08:cflfac    10 // Delta t factor (more is better, but typically 10-1000)
----- Numerical Scheme, Smoothing & Accuracy -----
09:iorder    2 // 0: low order, 1: high order, 2:2nd+LW, 3:4th+LW
10:nfil      1 // Interval time steps for filtering
11:wfil      0.1 // Relaxation parameter for filtering
12:omega     1.8 // Relaxation parameter for Poisson Eq (for cmode=0-2)
13:peps      1.0E-1 // Convergence limit for Poisson Eq (for cmode=0-2)
14:loopmax   200 // Maximum no. of iteration for Poisson Eq (for cmode=0-2)
15:wdrho     1.0 // Factor for d(rho)/dt (0<=wdrho<=1.0, 1 is ideal for cmode=1&2)
----- General BC and Global IC (White) -----
16:perikey   0 // 0: no peri, 1: x-peri, 2: y-peri, 3: all peri
17:pres0     1.0E+05 // Pressure in Pa (atmospheric: 1.0E+05 Pa)
18:uin0      0 // Initial u
19:vin0     -10.0 // Initial v
20:rho0      1.2 // Initial density (for cmode=0,3)
21:temp0     0 // Initial temperature (for cmode=1,2)
22:scalar0   0 // Initial Mixture fraction (for cmode=2)
----- BLUE Local BC and/or IC (optional) -----
23:uin1      0 // U
24:vin1     -10.0 // V
25:rho1      1.2 // Density (for cmode0,3)
26:temp1     0 // Temperature (for cmode1,2)
27:scalar1   0 // Mixture fraction (for cmode2)
----- RED Local BC and/or IC (optional) -----
28:uin2      0 // U
29:vin2      0 // V
30:rho2      0 // Density (for cmode0,3)
31:temp2     0 // Temperature (for cmode1,2)
32:scalar2   0 // Mixture fraction (for cmode2)
----- PINK Local BC and/or IC (pure air flow, optional) -----
33:uin3      0 // U
34:vin3      0 // V
35:temp3     0 // Temperature
----- BLACK Wall Boundary Condition (optional) -----
36:tempw     0 // Temperature (0: free, for cmode1,2)
----- GREEN Moving Boundary Condition (optional) -----
37:imb       0 // 0:one-time, 1:periodic
38:umb       0 // U of moving boundary
39:vmb       0 // V of moving boundary
40:tempmb    0 // Temperature (0: free, for cmode1,2)
----- YELLOW Scalar Boundary Condition (optional) -----
41:scalarT   0 // Local scalar value which might be used as tracer
----- Transport Properties & Thermochemical Conditions -----
42:mu        1.8E-5 // Dynamic viscosity of mixture
43:R         0 // Specific gas constant J/kg K (for cmode=1,2)
44:diff      0 // Diffusivity of mixture (for cmode=1,2,yellow BC)
45:Tu        0 // Unburnt temperature (for cmode=1)
46:Tb        0 // Burnt (flame) temperature (for cmode=1,2)
----- Chemical Reaction (for cmode=1) -----
47:krate     0 // Rate onstant
48:Trate     0 // Activation temperature
49:nrate     0 // Rate ~ rho*k*exp(-Ta/T)*T^n
50:cF        0 // Progress variable at which flame locates (optional for vis)
----- Non-Premixed Reacting Flow (for cmode=2) -----
51:Xst       0 // Stoichiometric mixture fraction at which flame locates
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52:sigma      0 // Relaxation parameter for density change (0<=sigma<=1, 1 is ideal)
----- Display & Output -----
53:box        3 // Pixel size of one grid point
54:nfig       10 // Interval time steps for figure output (0:off)
55:nfile      500 // Interval time steps for dump file output (0:off)
56:bcdisp     1 // Display wall boundary (0:off, 1:on)
57:idisp      4 // 0:off,1:rho,2:u,3:v,4:spd,5:vrt,6:T,7:rate,8:c/xi,9:P
58:cmax       0 // Scale (max). 0:auto scale
59:cmin       0 // Scale (min). 0:auto scale
60:icolor     2 // 0:Jet,1:Rainbow,2:Nishiki,3:Gray,4:Gray(inv),5:Hot,6:Sea,7:Leaf
61:icont      0 // (Reaction front) contour line (0:off,1:blck,2:red,3:grn,4:bl,5:wht)
62:linewidth  0 // Line width of contour line (1, 3, 5 or 7)
63:ivc        1 // Velocity vector (0:off,1:blck,2:red,3:grn,4:bl,5:wht)
64:ndiv       5 // Interval grid points between displayed vectors (0:auto)
65:vecsize    2 // Pixel size of vector arrow (0:auto)
----- Lagrangian Trajectory (optional) -----
66:lagkey     0 // 0:off,1:x, 2:y,3:x-x,4:y-y
67:lagcolor   0 // 0:black, 1:white
68:lagsize    0 // Pixel size of particles
69:nlagra     0 // Interval time steps of restart (>=100)
70:npart      0 // No. particle (>=1000)
----- Body Force (optional) -----
71:gfx        0 // X-body force
72:gfy        0 // Y-body force
73:dref       0 // Reference density. 1:max, 2:middle, 3:min density as reference
----- Initial Perturbation (optional) -----
74:pmode      0 // Mode of perturbation 0:off, 1:single mode, 2:multi, 3:multi (random amp.)
75:umag       0 // Velocity amplitude (m/s)
76:nwave      0 // Number of waves in x-direction
----- Others -----
77:nwait      0 // Wait time
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#End of file

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