

```
/*-----*\
|=====|
|\ \ / F i e l d | OpenFOAM: The Open Source CFD Toolbox |
|\ \ / O p e r a t i o n | Version: 1.6.x |
|\ \ / A n d | Web: www.OpenFOAM.org |
|\ \ W M a n i p u l a t i o n |
\*-----*/
/* Beuth Hochschule fuer Technik Berlin, FB IV, Labor fuer Klimatechnik */
\*-----*/
```

```
Build : 1.6.x-5e99c7bac54c
Exec : d:\OpenFOAM\bin\simpleFoam.exe
Date : Mar 15 2012
Time : 07:54:26
Host : DELTA-CSL2
PID : 4864
Case : D:/OpenFOAM/run/fliesskanal_cl_01
nProcs : 1
```

```
// ***** //
```

Create time

Create mesh for time = 0

Reading field p

Reading field U

Reading/calculating face flux field phi

Selecting incompressible transport model Newtonian

Selecting RAS turbulence model kOmegaSST

kOmegaSSTCoeffs

```
{
  alphaK1      0.85034;
  alphaK2      1;
  alphaOmega1  0.5;
  alphaOmega2  0.85616;
  gamma1       0.5532;
  gamma2       0.4403;
  beta1        0.075;
  beta2        0.0828;
  betaStar     0.09;
  a1           0.31;
  c1           10;
}
```

Starting time loop

Time = 1

DILUPBiCG: Solving for U_x , Initial residual = 0.474967427, Final residual = 0.00337268129, No Iterations 2
DILUPBiCG: Solving for U_y , Initial residual = 0.6323694, Final residual = 0.0449075974, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.604197358, Final residual = 0.0539043975, No Iterations 1
GAMG: Solving for p , Initial residual = 1, Final residual = 0.00972247407, No Iterations 40
time step continuity errors : sum local = 64.8994998, global = -19.3642671, cumulative = -19.3642671
DILUPBiCG: Solving for ω , Initial residual = 0.93086663, Final residual = 0.0321279833, No Iterations 2
bounding ω , min: -1614998.37 max: 5.95773123e+011 average: 11418368.7
DILUPBiCG: Solving for k , Initial residual = 1, Final residual = 0.00597802489, No Iterations 3
ExecutionTime = 15.709 s ClockTime = 16 s

Time = 2

DILUPBiCG: Solving for U_x , Initial residual = 0.425113714, Final residual = 0.0227848503, No Iterations 2
DILUPBiCG: Solving for U_y , Initial residual = 0.45309037, Final residual = 0.0113568408, No Iterations 2
DILUPBiCG: Solving for U_z , Initial residual = 0.487503495, Final residual = 0.0157938291, No Iterations 2
GAMG: Solving for p , Initial residual = 5.9301465e-007, Final residual = 5.9301465e-007, No Iterations 0
time step continuity errors : sum local = 12819.1545, global = -58.7372725, cumulative = -78.1015397
DILUPBiCG: Solving for ω , Initial residual = 0.229334113, Final residual = 0.00590140486, No Iterations 1
bounding ω , min: -883954.126 max: 3.76384607e+011 average: 13840235.3
DILUPBiCG: Solving for k , Initial residual = 0.475418342, Final residual = 0.0155376603, No Iterations 2
ExecutionTime = 18.189 s ClockTime = 19 s

Time = 3

DILUPBiCG: Solving for U_x , Initial residual = 0.498966407, Final residual = 0.026945629, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.54962018, Final residual = 0.0241155195, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.492728028, Final residual = 0.0227391358, No Iterations 1
GAMG: Solving for p , Initial residual = 6.56515248e-007, Final residual = 6.56515248e-007, No Iterations 0
time step continuity errors : sum local = 13526.0318, global = -65.9036973, cumulative = -144.005237
DILUPBiCG: Solving for ω , Initial residual = 0.240253111, Final residual = 0.00370655531, No Iterations 2
bounding ω , min: -2955961.21 max: 2.84764879e+011 average: 15557227.9

DILUPBiCG: Solving for k, Initial residual = 0.361588275, Final residual = 0.019888341,
No Iterations 2
ExecutionTime = 20.623 s ClockTime = 21 s

Time = 4

DILUPBiCG: Solving for Ux, Initial residual = 0.322209983, Final residual = 0.0138522946,
No Iterations 2
DILUPBiCG: Solving for Uy, Initial residual = 0.339746283, Final residual =
0.00165536663, No Iterations 3
DILUPBiCG: Solving for Uz, Initial residual = 0.32356297, Final residual = 0.0304800849,
No Iterations 2
GAMG: Solving for p, Initial residual = 6.78910073e-007, Final residual = 6.78910073e-
007, No Iterations 0
time step continuity errors : sum local = 14636.3846, global = -55.4772895, cumulative = -
199.482526
DILUPBiCG: Solving for omega, Initial residual = 0.182585832, Final residual =
0.00477757648, No Iterations 2
bounding omega, min: -515507.785 max: 2.84764879e+011 average: 16467223.7
DILUPBiCG: Solving for k, Initial residual = 0.259821705, Final residual = 0.00939780175,
No Iterations 2
ExecutionTime = 23.243 s ClockTime = 24 s

Time = 5

DILUPBiCG: Solving for Ux, Initial residual = 0.23278595, Final residual = 0.0106372421,
No Iterations 3
DILUPBiCG: Solving for Uy, Initial residual = 0.258352947, Final residual = 0.0185463006,
No Iterations 2
DILUPBiCG: Solving for Uz, Initial residual = 0.261796703, Final residual = 0.0161065131,
No Iterations 2
GAMG: Solving for p, Initial residual = 7.60360365e-007, Final residual = 7.60360365e-
007, No Iterations 0
time step continuity errors : sum local = 16777.0852, global = -41.3747631, cumulative = -
240.85729
DILUPBiCG: Solving for omega, Initial residual = 0.167254736, Final residual =
0.00556928183, No Iterations 2
bounding omega, min: -603650.521 max: 2.84764879e+011 average: 17563228.8
DILUPBiCG: Solving for k, Initial residual = 0.223277589, Final residual = 0.00780502005,
No Iterations 2
ExecutionTime = 25.833 s ClockTime = 26 s

Time = 6

DILUPBiCG: Solving for Ux, Initial residual = 0.217119739, Final residual = 0.0136954484,
No Iterations 2
DILUPBiCG: Solving for Uy, Initial residual = 0.223708224, Final residual = 0.0110864041,
No Iterations 2
DILUPBiCG: Solving for Uz, Initial residual = 0.256549725, Final residual =
0.00744502203, No Iterations 2

GAMG: Solving for p, Initial residual = 8.6744887e-007, Final residual = 8.6744887e-007, No Iterations 0

time step continuity errors : sum local = 19353.3347, global = -27.8212339, cumulative = -268.678523

DILUPBiCG: Solving for omega, Initial residual = 0.144229599, Final residual = 0.000680703428, No Iterations 3

bounding omega, min: -2174259.77 max: 2.84764879e+011 average: 18566986.5

DILUPBiCG: Solving for k, Initial residual = 0.19869178, Final residual = 0.00659876523, No Iterations 2

ExecutionTime = 28.422 s ClockTime = 29 s

Time = 7

DILUPBiCG: Solving for Ux, Initial residual = 0.195959867, Final residual = 0.0107153618, No Iterations 2

DILUPBiCG: Solving for Uy, Initial residual = 0.210280824, Final residual = 0.0184542367, No Iterations 2

DILUPBiCG: Solving for Uz, Initial residual = 0.225466733, Final residual = 0.00520257391, No Iterations 2

GAMG: Solving for p, Initial residual = 1.00753311e-006, Final residual = 6.978407e-007, No Iterations 1

time step continuity errors : sum local = 15629.7097, global = -36.2203823, cumulative = -304.898906

DILUPBiCG: Solving for omega, Initial residual = 0.182315629, Final residual = 0.00306230868, No Iterations 2

bounding omega, min: -1999144.92 max: 2.84764879e+011 average: 19394181.2

DILUPBiCG: Solving for k, Initial residual = 0.212770292, Final residual = 0.00573603556, No Iterations 2

bounding k, min: -5.21088382e-007 max: 0.252951172 average: 0.00169562314

ExecutionTime = 31.106 s ClockTime = 31 s

Time = 8

DILUPBiCG: Solving for Ux, Initial residual = 0.173546409, Final residual = 0.0124508398, No Iterations 2

DILUPBiCG: Solving for Uy, Initial residual = 0.214526991, Final residual = 0.0156975296, No Iterations 2

DILUPBiCG: Solving for Uz, Initial residual = 0.348540534, Final residual = 0.0291708563, No Iterations 2

GAMG: Solving for p, Initial residual = 2.80064562e-007, Final residual = 2.80064562e-007, No Iterations 0

time step continuity errors : sum local = 37220.5079, global = -8.01024235, cumulative = -312.909148

DILUPBiCG: Solving for omega, Initial residual = 0.0985229309, Final residual = 0.00704683557, No Iterations 1

bounding omega, min: -2308460.65 max: 1.61498653e+012 average: 24877575

DILUPBiCG: Solving for k, Initial residual = 0.217745497, Final residual = 0.00494972528, No Iterations 2

bounding k, min: -3.54402617e-007 max: 0.145585033 average: 0.00196942431

ExecutionTime = 33.664 s ClockTime = 34 s

Time = 9

DILUPBiCG: Solving for U_x , Initial residual = 0.223762812, Final residual = 0.00105033371, No Iterations 3
DILUPBiCG: Solving for U_y , Initial residual = 0.223835497, Final residual = 0.00300655864, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.232505928, Final residual = 0.00228879226, No Iterations 1
GAMG: Solving for p , Initial residual = 3.70702728e-007, Final residual = 3.70702728e-007, No Iterations 0
time step continuity errors : sum local = 48755.3295, global = 4.98269357, cumulative = -307.926455
DILUPBiCG: Solving for ω , Initial residual = 0.212971468, Final residual = 0.00699265845, No Iterations 1
bounding ω , min: -2081583.88 max: 6.25594522e+011 average: 25305013
DILUPBiCG: Solving for k , Initial residual = 0.196286155, Final residual = 0.00508281683, No Iterations 2
bounding k , min: -0.000187363762 max: 0.225892352 average: 0.00233034485
ExecutionTime = 36.176 s ClockTime = 37 s

Time = 10

DILUPBiCG: Solving for U_x , Initial residual = 0.231916018, Final residual = 0.0174951872, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.271885244, Final residual = 0.00252509017, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.270888004, Final residual = 0.001822853, No Iterations 1
GAMG: Solving for p , Initial residual = 4.06057447e-007, Final residual = 4.06057447e-007, No Iterations 0
time step continuity errors : sum local = 53690.4116, global = 21.7943548, cumulative = -286.1321
DILUPBiCG: Solving for ω , Initial residual = 0.0725909684, Final residual = 0.00544584746, No Iterations 1
bounding ω , min: -1779783.27 max: 4.63920569e+011 average: 27123030.6
DILUPBiCG: Solving for k , Initial residual = 0.20370302, Final residual = 0.00540758602, No Iterations 2
bounding k , min: -0.000213908247 max: 0.353122467 average: 0.00281946245
ExecutionTime = 46.581 s ClockTime = 47 s

Time = 11

DILUPBiCG: Solving for U_x , Initial residual = 0.138858544, Final residual = 0.0132332875, No Iterations 2
DILUPBiCG: Solving for U_y , Initial residual = 0.0697705816, Final residual = 0.0031182518, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0558478404, Final residual = 0.00191015936, No Iterations 1
GAMG: Solving for p , Initial residual = 4.81803842e-007, Final residual = 4.81803842e-007, No Iterations 0

time step continuity errors : sum local = 63165.5882, global = 41.4074424, cumulative = -244.724657

DILUPBiCG: Solving for omega, Initial residual = 0.0595636521, Final residual = 0.000677939088, No Iterations 2

bounding omega, min: -1562264.18 max: 6.94051592e+011 average: 31488988.2

DILUPBiCG: Solving for k, Initial residual = 0.214522274, Final residual = 0.00434134534, No Iterations 2

bounding k, min: -0.000331690352 max: 0.870793446 average: 0.0034782944

ExecutionTime = 49.186 s ClockTime = 50 s

Time = 12

DILUPBiCG: Solving for Ux, Initial residual = 0.134941081, Final residual = 0.00102118024, No Iterations 3

DILUPBiCG: Solving for Uy, Initial residual = 0.0693482598, Final residual = 0.00336952676, No Iterations 1

DILUPBiCG: Solving for Uz, Initial residual = 0.0561277354, Final residual = 0.00222907565, No Iterations 1

GAMG: Solving for p, Initial residual = 5.61883847e-007, Final residual = 5.61883847e-007, No Iterations 0

time step continuity errors : sum local = 73279.6735, global = 62.5552241, cumulative = -182.169433

DILUPBiCG: Solving for omega, Initial residual = 0.0420917521, Final residual = 0.000405844146, No Iterations 2

bounding omega, min: -1540266.88 max: 7.19523135e+011 average: 36029828.2

DILUPBiCG: Solving for k, Initial residual = 0.210942214, Final residual = 0.00415574319, No Iterations 2

bounding k, min: -0.000727313221 max: 1.91377643 average: 0.00434176488

ExecutionTime = 51.744 s ClockTime = 52 s

Time = 13

DILUPBiCG: Solving for Ux, Initial residual = 0.130016226, Final residual = 0.00396193874, No Iterations 2

DILUPBiCG: Solving for Uy, Initial residual = 0.0743109435, Final residual = 0.00332815855, No Iterations 1

DILUPBiCG: Solving for Uz, Initial residual = 0.0600149985, Final residual = 0.00193493305, No Iterations 1

GAMG: Solving for p, Initial residual = 6.4586324e-007, Final residual = 6.4586324e-007, No Iterations 0

time step continuity errors : sum local = 83857.7221, global = 85.1325805, cumulative = -97.0368528

DILUPBiCG: Solving for omega, Initial residual = 0.0408579167, Final residual = 0.000374090695, No Iterations 2

bounding omega, min: -1808424.96 max: 7.59948759e+011 average: 40668107.3

DILUPBiCG: Solving for k, Initial residual = 0.208369127, Final residual = 0.00421475353, No Iterations 2

bounding k, min: -0.00146957791 max: 2.30203642 average: 0.00549588898

ExecutionTime = 54.287 s ClockTime = 55 s

Time = 14

DILUPBiCG: Solving for U_x , Initial residual = 0.120576753, Final residual = 0.00416790906, No Iterations 2
DILUPBiCG: Solving for U_y , Initial residual = 0.0640273172, Final residual = 0.00394453445, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0465565587, Final residual = 0.00263536801, No Iterations 1
GAMG: Solving for p , Initial residual = 7.393651e-007, Final residual = 7.393651e-007, No Iterations 0
time step continuity errors : sum local = 95787.4128, global = 108.960714, cumulative = 11.9238611
DILUPBiCG: Solving for ω , Initial residual = 0.0465564945, Final residual = 0.00409547486, No Iterations 1
bounding ω , min: -2083294.34 max: 7.30022036e+011 average: 43335326.9
DILUPBiCG: Solving for k , Initial residual = 0.208231804, Final residual = 0.0039359328, No Iterations 2
bounding k , min: -0.00306286882 max: 4.15183832 average: 0.00706185658
ExecutionTime = 56.767 s ClockTime = 57 s

Time = 15

DILUPBiCG: Solving for U_x , Initial residual = 0.121413447, Final residual = 0.00271884172, No Iterations 3
DILUPBiCG: Solving for U_y , Initial residual = 0.0738508236, Final residual = 0.00337030453, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0599725222, Final residual = 0.00198374049, No Iterations 1
GAMG: Solving for p , Initial residual = 8.3457488e-007, Final residual = 8.3457488e-007, No Iterations 0
time step continuity errors : sum local = 107907.447, global = 133.113688, cumulative = 145.037549
DILUPBiCG: Solving for ω , Initial residual = 0.0429998282, Final residual = 0.0037819802, No Iterations 1
bounding ω , min: -1553348.38 max: 7.53356261e+011 average: 45531665.3
DILUPBiCG: Solving for k , Initial residual = 0.213099413, Final residual = 0.00401852805, No Iterations 2
bounding k , min: -0.00603909627 max: 8.29946388 average: 0.00927903325
ExecutionTime = 59.372 s ClockTime = 60 s

Time = 16

DILUPBiCG: Solving for U_x , Initial residual = 0.122874812, Final residual = 0.00654836199, No Iterations 2
DILUPBiCG: Solving for U_y , Initial residual = 0.0802074612, Final residual = 0.00312543767, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0697220688, Final residual = 0.00189695429, No Iterations 1
GAMG: Solving for p , Initial residual = 9.26244117e-007, Final residual = 9.26244117e-007, No Iterations 0
time step continuity errors : sum local = 119673.593, global = 158.675361, cumulative = 303.71291

DILUPBiCG: Solving for omega, Initial residual = 0.040943593, Final residual = 0.00258769337, No Iterations 1
bounding omega, min: -1530361.07 max: 7.53319536e+011 average: 46488223.8
DILUPBiCG: Solving for k, Initial residual = 0.217253169, Final residual = 0.00377050095, No Iterations 2
bounding k, min: -0.011169767 max: 15.6762374 average: 0.0125007558
ExecutionTime = 61.884 s ClockTime = 62 s

Time = 17

DILUPBiCG: Solving for Ux, Initial residual = 0.11374022, Final residual = 0.00926457132, No Iterations 2
DILUPBiCG: Solving for Uy, Initial residual = 0.0857124045, Final residual = 0.00296389303, No Iterations 1
DILUPBiCG: Solving for Uz, Initial residual = 0.0713352747, Final residual = 0.00182519934, No Iterations 1
GAMG: Solving for p, Initial residual = 1.02024831e-006, Final residual = 5.56673716e-007, No Iterations 1
time step continuity errors : sum local = 71871.4906, global = 267.956987, cumulative = 571.669898
DILUPBiCG: Solving for omega, Initial residual = 0.979764056, Final residual = 0.0365899488, No Iterations 1
bounding omega, min: -9623204.94 max: 1.41421961e+014 average: 1.06167907e+009
DILUPBiCG: Solving for k, Initial residual = 0.61904016, Final residual = 0.000863971227, No Iterations 1
bounding k, min: -0.0193979567 max: 61.2354218 average: 0.016174172
ExecutionTime = 64.458 s ClockTime = 65 s

Time = 18

DILUPBiCG: Solving for Ux, Initial residual = 0.277106655, Final residual = 0.00660239453, No Iterations 2
DILUPBiCG: Solving for Uy, Initial residual = 0.694065511, Final residual = 0.0622322083, No Iterations 2
DILUPBiCG: Solving for Uz, Initial residual = 0.709823617, Final residual = 0.0679211479, No Iterations 2
GAMG: Solving for p, Initial residual = 2.24203923e-006, Final residual = 3.72031776e-008, No Iterations 1
time step continuity errors : sum local = 1383795.12, global = 979.818141, cumulative = 1551.48804
DILUPBiCG: Solving for omega, Initial residual = 0.958060079, Final residual = 0.0464756704, No Iterations 2
bounding omega, min: -29269.1952 max: 4.67063468e+016 average: 2.06240781e+011
DILUPBiCG: Solving for k, Initial residual = 0.648905116, Final residual = 0.000145458313, No Iterations 1
bounding k, min: -9.240355e-008 max: 226.06258 average: 0.0209817153
ExecutionTime = 67.125 s ClockTime = 67 s

Time = 19

DILUPBiCG: Solving for U_x , Initial residual = 0.461011737, Final residual = 0.0349974544, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.66801962, Final residual = 0.0490275191, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.673890991, Final residual = 0.049331834, No Iterations 1
GAMG: Solving for p , Initial residual = 3.30057159e-008, Final residual = 3.30057159e-008, No Iterations 0
time step continuity errors : sum local = 16078646.7, global = 880.370063, cumulative = 2431.8581
DILUPBiCG: Solving for ω , Initial residual = 0.53647018, Final residual = 1.29324729e-005, No Iterations 1
bounding ω , min: -29238.862 max: 1.40494572e+016 average: 6.64780788e+010
DILUPBiCG: Solving for k , Initial residual = 0.509861643, Final residual = 0.000659669032, No Iterations 1
bounding k , min: -2.58470809e-007 max: 105.701346 average: 0.0251470446
ExecutionTime = 69.637 s ClockTime = 70 s

Time = 20

DILUPBiCG: Solving for U_x , Initial residual = 0.288642568, Final residual = 0.000215221421, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.245372896, Final residual = 5.77606071e-005, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.244868602, Final residual = 5.54319534e-005, No Iterations 1
GAMG: Solving for p , Initial residual = 3.7668882e-008, Final residual = 3.7668882e-008, No Iterations 0
time step continuity errors : sum local = 18293214.4, global = 1279.18412, cumulative = 3711.04222
DILUPBiCG: Solving for ω , Initial residual = 0.531605341, Final residual = 4.88748312e-005, No Iterations 1
bounding ω , min: -29208.9356 max: 4.23204589e+015 average: 2.31475656e+010
DILUPBiCG: Solving for k , Initial residual = 0.271005896, Final residual = 0.00105686889, No Iterations 1
bounding k , min: -5.05566203e-005 max: 63.3700184 average: 0.0320199168
ExecutionTime = 80.089 s ClockTime = 80 s

Time = 21

DILUPBiCG: Solving for U_x , Initial residual = 0.186663287, Final residual = 9.39295323e-005, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.105490159, Final residual = 1.80303809e-005, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.105368454, Final residual = 1.56812165e-005, No Iterations 1
GAMG: Solving for p , Initial residual = 3.57826421e-008, Final residual = 3.57826421e-008, No Iterations 0
time step continuity errors : sum local = 17072832, global = 1660.04498, cumulative = 5371.0872

DILUPBiCG: Solving for omega, Initial residual = 0.503950029, Final residual = 0.00186669284, No Iterations 1
bounding omega, min: -29242.4421 max: 1.32278811e+015 average: 1.11184449e+010
DILUPBiCG: Solving for k, Initial residual = 0.402096879, Final residual = 0.00259590341, No Iterations 1
bounding k, min: -0.000163956058 max: 200.004529 average: 0.0421270473
ExecutionTime = 82.6 s ClockTime = 83 s

Time = 22

DILUPBiCG: Solving for Ux, Initial residual = 0.0365689369, Final residual = 0.000131657451, No Iterations 1
DILUPBiCG: Solving for Uy, Initial residual = 0.0305415572, Final residual = 4.33764631e-005, No Iterations 1
DILUPBiCG: Solving for Uz, Initial residual = 0.0303631505, Final residual = 4.02779929e-005, No Iterations 1
GAMG: Solving for p, Initial residual = 3.82936451e-008, Final residual = 3.82936451e-008, No Iterations 0
time step continuity errors : sum local = 18105204.7, global = 2028.55999, cumulative = 7399.64719
DILUPBiCG: Solving for omega, Initial residual = 0.364574093, Final residual = 0.0091715358, No Iterations 1
bounding omega, min: -29514.1445 max: 5.46247128e+014 average: 8.71681874e+009
DILUPBiCG: Solving for k, Initial residual = 0.378377549, Final residual = 0.00554028428, No Iterations 1
bounding k, min: -0.0027157664 max: 293.901612 average: 0.0569945643
ExecutionTime = 85.153 s ClockTime = 85 s

Time = 23

DILUPBiCG: Solving for Ux, Initial residual = 0.0263848102, Final residual = 0.000200815398, No Iterations 1
DILUPBiCG: Solving for Uy, Initial residual = 0.0512642081, Final residual = 5.64419533e-005, No Iterations 1
DILUPBiCG: Solving for Uz, Initial residual = 0.0512101682, Final residual = 5.54845055e-005, No Iterations 1
GAMG: Solving for p, Initial residual = 4.08662397e-008, Final residual = 4.08662397e-008, No Iterations 0
time step continuity errors : sum local = 19201844.9, global = 2395.81761, cumulative = 9795.46481
DILUPBiCG: Solving for omega, Initial residual = 0.202757539, Final residual = 0.0136767286, No Iterations 1
bounding omega, min: -26747.22 max: 6.42857636e+014 average: 1.02153191e+010
DILUPBiCG: Solving for k, Initial residual = 0.376251025, Final residual = 0.0283061723, No Iterations 1
bounding k, min: -0.00483449772 max: 557.336336 average: 0.0783108846
ExecutionTime = 87.647 s ClockTime = 88 s

Time = 24

DILUPBiCG: Solving for U_x , Initial residual = 0.0203013974, Final residual = 0.000496351852, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.00955154532, Final residual = 0.000268794533, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.00960734329, Final residual = 0.000262671018, No Iterations 1
GAMG: Solving for p , Initial residual = 4.38247653e-008, Final residual = 4.38247653e-008, No Iterations 0
time step continuity errors : sum local = 20496032.4, global = 2800.60796, cumulative = 12596.0728
DILUPBiCG: Solving for ω , Initial residual = 0.162274239, Final residual = 0.00706323681, No Iterations 1
bounding ω , min: -29465.7661 max: 5.71502341e+014 average: 1.16130121e+010
DILUPBiCG: Solving for k , Initial residual = 0.40962008, Final residual = 0.00369913101, No Iterations 2
bounding k , min: -0.00782224747 max: 1068.41907 average: 0.11809466
ExecutionTime = 90.158 s ClockTime = 90 s

Time = 25

DILUPBiCG: Solving for U_x , Initial residual = 0.0313746534, Final residual = 0.000587980066, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.0197433778, Final residual = 0.000609084786, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0194975715, Final residual = 0.000599624427, No Iterations 1
GAMG: Solving for p , Initial residual = 4.69655191e-008, Final residual = 4.69655191e-008, No Iterations 0
time step continuity errors : sum local = 21867446.5, global = 3257.47182, cumulative = 15853.5446
DILUPBiCG: Solving for ω , Initial residual = 0.155487119, Final residual = 0.0143479222, No Iterations 1
bounding ω , min: -27568.7714 max: 6.43860735e+014 average: 1.39541642e+010
DILUPBiCG: Solving for k , Initial residual = 0.381112352, Final residual = 0.00362030374, No Iterations 2
bounding k , min: -0.00360602353 max: 1851.15103 average: 0.191775959
ExecutionTime = 92.732 s ClockTime = 93 s

Time = 26

DILUPBiCG: Solving for U_x , Initial residual = 0.0287698869, Final residual = 0.00059308026, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.0108768698, Final residual = 0.000428671134, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0106284937, Final residual = 0.000423822045, No Iterations 1
GAMG: Solving for p , Initial residual = 5.05664329e-008, Final residual = 5.05664329e-008, No Iterations 0
time step continuity errors : sum local = 23447191.8, global = 3768.30451, cumulative = 19621.8491

DILUPBiCG: Solving for omega, Initial residual = 0.216675232, Final residual = 0.00716764362, No Iterations 1
bounding omega, min: -29264.8877 max: 6.08604724e+014 average: 1.29356968e+010
DILUPBiCG: Solving for k, Initial residual = 0.333723831, Final residual = 0.00817052121, No Iterations 2
bounding k, min: -0.0489251446 max: 10064.7487 average: 0.37466847
ExecutionTime = 95.213 s ClockTime = 96 s

Time = 27

DILUPBiCG: Solving for Ux, Initial residual = 0.0204804705, Final residual = 0.00076532087, No Iterations 1
DILUPBiCG: Solving for Uy, Initial residual = 0.0108213292, Final residual = 0.000440956764, No Iterations 1
DILUPBiCG: Solving for Uz, Initial residual = 0.0106191822, Final residual = 0.000434413737, No Iterations 1
GAMG: Solving for p, Initial residual = 5.49785872e-008, Final residual = 5.49785872e-008, No Iterations 0
time step continuity errors : sum local = 25341870.5, global = 4337.65, cumulative = 23959.4991
DILUPBiCG: Solving for omega, Initial residual = 0.131758523, Final residual = 0.00125202826, No Iterations 2
bounding omega, min: -29064.8738 max: 6.46369248e+014 average: 1.27835144e+010
DILUPBiCG: Solving for k, Initial residual = 0.371477985, Final residual = 0.0317065703, No Iterations 2
bounding k, min: -0.101634434 max: 73174.2746 average: 1.16644658
ExecutionTime = 97.709 s ClockTime = 98 s

Time = 28

DILUPBiCG: Solving for Ux, Initial residual = 0.0540087683, Final residual = 0.00085061072, No Iterations 1
DILUPBiCG: Solving for Uy, Initial residual = 0.00614160664, Final residual = 7.26932268e-005, No Iterations 2
DILUPBiCG: Solving for Uz, Initial residual = 0.00603865012, Final residual = 7.25382311e-005, No Iterations 2
GAMG: Solving for p, Initial residual = 5.8392327e-008, Final residual = 5.8392327e-008, No Iterations 0
time step continuity errors : sum local = 26767589.5, global = 5038.20364, cumulative = 28997.7027
DILUPBiCG: Solving for omega, Initial residual = 0.103263458, Final residual = 0.00979958041, No Iterations 1
bounding omega, min: -30938.1731 max: 6.10655664e+014 average: 1.20922788e+010
DILUPBiCG: Solving for k, Initial residual = 0.533576912, Final residual = 0.0489443723, No Iterations 2
bounding k, min: -0.103666463 max: 532969.437 average: 5.18308409
ExecutionTime = 100.283 s ClockTime = 101 s

Time = 29

DILUPBiCG: Solving for U_x , Initial residual = 0.0593040956, Final residual = 0.00100908663, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.00923915654, Final residual = 0.000504152763, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.0090803075, Final residual = 0.000495476285, No Iterations 1
GAMG: Solving for p , Initial residual = 6.26516393e-008, Final residual = 6.26516393e-008, No Iterations 0
time step continuity errors : sum local = 28519520.6, global = 5626.58979, cumulative = 34624.2925
DILUPBiCG: Solving for ω , Initial residual = 0.0924824755, Final residual = 4.54597957e-005, No Iterations 3
bounding ω , min: -29201.7111 max: 6.1858856e+014 average: 1.2036123e+010
DILUPBiCG: Solving for k , Initial residual = 0.674442587, Final residual = 0.0118873441, No Iterations 3
bounding k , min: -5.70918553 max: 984800.837 average: 13.7903911
ExecutionTime = 102.966 s ClockTime = 103 s

Time = 30

DILUPBiCG: Solving for U_x , Initial residual = 0.113854103, Final residual = 0.00122996522, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.00670948447, Final residual = 0.000520764284, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.00662705974, Final residual = 0.000514904411, No Iterations 1
GAMG: Solving for p , Initial residual = 6.81011406e-008, Final residual = 6.81011406e-008, No Iterations 0
time step continuity errors : sum local = 30753518.3, global = 6123.88851, cumulative = 40748.181
DILUPBiCG: Solving for ω , Initial residual = 0.0942961771, Final residual = 0.00916731758, No Iterations 1
bounding ω , min: -30332.5222 max: 6.03097669e+014 average: 1.12439783e+010
DILUPBiCG: Solving for k , Initial residual = 0.584262214, Final residual = 0.0313178972, No Iterations 3
bounding k , min: -64.1167328 max: 7185933.49 average: 53.0504933
ExecutionTime = 113.496 s ClockTime = 114 s

Time = 31

DILUPBiCG: Solving for U_x , Initial residual = 0.0950462278, Final residual = 0.0014358271, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.00570488164, Final residual = 0.00051023179, No Iterations 1
DILUPBiCG: Solving for U_z , Initial residual = 0.00567022554, Final residual = 0.000505739397, No Iterations 1
GAMG: Solving for p , Initial residual = 7.381053e-008, Final residual = 7.381053e-008, No Iterations 0
time step continuity errors : sum local = 33038421.5, global = 6511.23251, cumulative = 47259.4136

DILUPBiCG: Solving for omega, Initial residual = 0.0785795779, Final residual = 0.000856133211, No Iterations 2
bounding omega, min: -29112.8524 max: 6.10994698e+014 average: 1.08390491e+010
DILUPBiCG: Solving for k, Initial residual = 0.376310436, Final residual = 0.0166536432, No Iterations 3
bounding k, min: -0.805612618 max: 52444717.8 average: 256.484091
ExecutionTime = 116.069 s ClockTime = 116 s

Time = 32

DILUPBiCG: Solving for Ux, Initial residual = 0.10852714, Final residual = 0.00181336037, No Iterations 1
DILUPBiCG: Solving for Uy, Initial residual = 0.00534856896, Final residual = 7.67820425e-005, No Iterations 2
DILUPBiCG: Solving for Uz, Initial residual = 0.00533653246, Final residual = 7.83453472e-005, No Iterations 2
GAMG: Solving for p, Initial residual = 8.18563408e-008, Final residual = 8.18563408e-008, No Iterations 0
time step continuity errors : sum local = 36269639.4, global = 6829.44605, cumulative = 54088.8596
DILUPBiCG: Solving for omega, Initial residual = 0.0729564862, Final residual = 0.00676641402, No Iterations 1
bounding omega, min: -29916.476 max: 6.04235411e+014 average: 9.96136909e+009
DILUPBiCG: Solving for k, Initial residual = 0.609574392, Final residual = 0.0209950404, No Iterations 3
bounding k, min: -1.46892969 max: 382678890 average: 1703.34913
ExecutionTime = 118.69 s ClockTime = 119 s

Time = 33

DILUPBiCG: Solving for Ux, Initial residual = 0.103966913, Final residual = 0.0020593685, No Iterations 1
DILUPBiCG: Solving for Uy, Initial residual = 0.00515400567, Final residual = 0.000178006214, No Iterations 2
DILUPBiCG: Solving for Uz, Initial residual = 0.00518886379, Final residual = 0.000194223282, No Iterations 2
GAMG: Solving for p, Initial residual = 9.06775923e-008, Final residual = 9.06775923e-008, No Iterations 0
time step continuity errors : sum local = 39692826.3, global = 7165.40557, cumulative = 61254.2652
DILUPBiCG: Solving for omega, Initial residual = 0.0687363505, Final residual = 0.00114691787, No Iterations 2
bounding omega, min: -29027.5881 max: 6.07804842e+014 average: 9.73808709e+009
DILUPBiCG: Solving for k, Initial residual = 0.823843448, Final residual = 0.021785335, No Iterations 3
bounding k, min: -7.05524459 max: 2.78923296e+009 average: 12747.8086
ExecutionTime = 121.327 s ClockTime = 122 s

Time = 34

DILUPBiCG: Solving for U_x , Initial residual = 0.110825985, Final residual = 0.00257657658, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.00490150539, Final residual = 9.25599984e-005, No Iterations 2
DILUPBiCG: Solving for U_z , Initial residual = 0.00495422566, Final residual = 9.63944635e-005, No Iterations 2
GAMG: Solving for p , Initial residual = 9.95027487e-008, Final residual = 9.95027487e-008, No Iterations 0
time step continuity errors : sum local = 42950213.3, global = 7589.15393, cumulative = 68843.4191
DILUPBiCG: Solving for ω , Initial residual = 0.0600158252, Final residual = 0.00562235184, No Iterations 1
bounding ω , min: -29946.46 max: 6.08249425e+014 average: 9.07226045e+009
DILUPBiCG: Solving for k , Initial residual = 0.800043147, Final residual = 0.0114242209, No Iterations 3
bounding k , min: -5.58875498 max: 2.0314633e+010 average: 101443.254
ExecutionTime = 124.01 s ClockTime = 124 s

Time = 35

DILUPBiCG: Solving for U_x , Initial residual = 0.10898764, Final residual = 0.00306993703, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.0047446333, Final residual = 9.24785333e-005, No Iterations 2
DILUPBiCG: Solving for U_z , Initial residual = 0.0048208086, Final residual = 8.77479754e-005, No Iterations 2
GAMG: Solving for p , Initial residual = 1.10920067e-007, Final residual = 1.10920067e-007, No Iterations 0
time step continuity errors : sum local = 47220567.5, global = 8070.34639, cumulative = 76913.7655
DILUPBiCG: Solving for ω , Initial residual = 0.0600802052, Final residual = 0.000962962639, No Iterations 2
bounding ω , min: -29186.5807 max: 6.13983118e+014 average: 8.93311268e+009
DILUPBiCG: Solving for k , Initial residual = 0.656359812, Final residual = 0.00413365337, No Iterations 3
bounding k , min: -10.2529737 max: 6.2132438e+010 average: 341679.567
ExecutionTime = 126.615 s ClockTime = 127 s

Time = 36

DILUPBiCG: Solving for U_x , Initial residual = 0.127118212, Final residual = 0.00332021128, No Iterations 1
DILUPBiCG: Solving for U_y , Initial residual = 0.00471262574, Final residual = 9.87074156e-005, No Iterations 2
DILUPBiCG: Solving for U_z , Initial residual = 0.00481704138, Final residual = 0.000101189576, No Iterations 2
GAMG: Solving for p , Initial residual = 1.22731592e-007, Final residual = 1.22731592e-007, No Iterations 0
time step continuity errors : sum local = 51577159, global = 8516.25213, cumulative = 85430.0176

DILUPBiCG: Solving for omega, Initial residual = 0.0544704028, Final residual = 0.000952814221, No Iterations 2
bounding omega, min: -29201.8666 max: 6.13468642e+014 average: 8.42548517e+009
DILUPBiCG: Solving for k, Initial residual = 0.503744158, Final residual = 0.0433226793, No Iterations 2
bounding k, min: -20.1081132 max: 1.28400364e+011 average: 796927.148