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1  <?xml version="1.0" encoding="UTF-8" ?>
2  <case app="GenCase4 v4.0.077 (14-08-2018)" date="31-08-2018 14:00:20">
3    <casedef>
4      <constantsdef>
5        <lattice bound="1" fluid="1" />
6        <gravity x="0" y="0" z="-9.81" comment="Gravitational acceleration"
7          units_comment="m/s^2" />
8        <rhop0 value="5000" comment="Reference density of the fluid"
9          units_comment="kg/m^3" />
10       <hswl value="0" auto="true" comment="Maximum still water level to
11         calculate speedofsound using coefsound" units_comment="metres (m)" />
12       <gamma value="7" comment="Polytropic constant for water used in the
13         state equation" />
14       <speedsystem value="0" auto="true" comment="Maximum system speed (by
15         default the dam-break propagation is used)" />
16       <coefsound value="20" comment="Coefficient to multiply speedsystem" />
17       <speedsound value="0" auto="true" comment="Speed of sound to use in the
18         simulation (by default speedofsound=coefsound*speedsystem)" />
19       <coefh value="1" comment="Coefficient to calculate the smoothing length
20         (h=coefh*sqrt(3*dp^2) in 3D)" />
21       <cflnumber value="0.5" comment="Coefficient to multiply dt" />
22       <h value="0" auto="true" units_comment="metres (m)" />
23       <b value="0" auto="true" units_comment="Pascal (Pa)" />
24       <massbound value="0" auto="true" units_comment="kg" />
25       <massfluid value="0" auto="true" units_comment="kg" />
26     </constantsdef>
27     <mkconfig boundcount="241" fluidcount="9">
28     </mkconfig>
29     <geometry>
30       <definition dp="0.001" comment="Initial inter-particle distance"
31         units_comment="metres (m)">
32         <pointmin x="-0.5" y="-0.5" z="-0.5" />
33         <pointmax x="0.5" y="0.5" z="0.5" />
34       </definition>
35       <commands>
36         <mainlist>
37           <setshapemode>actual | dp | bound</setshapemode>
38           <setmkbound mk="0"/>
39           <drawfilestl file="Thickness.stl" objname="Thickness"
40             autofill="false">
41             <drawscale x="0.001" y="0.001" z="0.001" />
42           </drawfilestl>
43           <setmkfluid mk="2"/>
44           <setdrawmode mode="full"/>
45           <drawcylinder radius="0.00675" objname="Cylinder002">
46             <point x="0.0" y="0.005" z="-0.067" />
47             <point x="0.0" y="0.005" z="-0.0070000000000000006" />
48           </drawcylinder>
49           <setmkbound mk="1"/>
50           <setdrawmode mode="full"/>
51           <drawcylinder radius="0.00745" objname="Cylinder003">
52             <point x="0.0" y="0.005" z="-0.0685" />
53             <point x="0.0" y="0.005" z="-0.0675" />
54           </drawcylinder>
55           <setmkbound mk="2"/>
56           <drawfilestl file="Thickness001.stl" objname="Thickness001"
57             autofill="false">
58             <drawscale x="0.001" y="0.001" z="0.001" />
59           </drawfilestl>
60           <shapeout file="" />
61         </mainlist>
62       </commands>
63     </geometry>
64     <motion>
65       <objreal ref="1">
66         <begin mov="1" start="0"/>
67         <mvrect id="1" duration="6.5" next="1">
68           <vel x="0.0" y="0.0" z="0.005792" units_comment="m/s" />
69         </mvrect>

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60         </objreal>
61     </motion>
62 </casedef>
63 <execution>
64     <special>
65         <nnphases> %Defines non-newtonian phases parameters
66             <phase mkfluid="2">
67                 <rho_p value="5000" comment="Density of the phase"
68                 />
69                 <visco value="2.88e-4" comment="Kinematic viscosity (or
70                 consistency index) value for phase (m2/s)" />
71                 <tau_yield value="25" comment="User defined maximum specific
72                 yield stress of phase (Pa m3/kg)" />
73                 <HBP_m value="0.3938" comment="Use 0 to reduce Newtonian liquid,
74                 order of 10 for power law and order of 100 for Bingham (sec) " />
75                 <HBP_n value="0.8" comment="Use 1 to reduce to Newtonian, <1 for
76                 shear thinning >1 for shear thickening " />
77                 <phasetype value="0" comment="Non-Newtonian=0 only option in
78                 v5.0" />
79             </phase>
80         </nnphases>
81 </special>
82 <parameters>
83     <parameter key="SavePosDouble" value="0" comment="Saves particle
84     position using double precision (default=0)" />
85     <parameter key="StepAlgorithm" value="1" comment="Step Algorithm
86     1:Verlet, 2:Symplectic (default=1)" />
87     <parameter key="VerletSteps" value="20" comment="Verlet only: Number of
88     steps to apply Euler timestepping (default=40)" />
89     <parameter key="Kernel" value="2" comment="Interaction Kernel 1:Cubic
90     Spline, 2:Wendland (default=2)" />
91     %Choice of reology treatment, velocity gradient calculation and
92     viscosity treatment
93     <parameter key="RheologyTreatment" value="2" comment="Reology
94     formulation 1:Single-phase classic, 2: Single and multi-phase"
95     />
96     <parameter key="VelocityGradientType" value="1" comment="Velocity
97     gradient formulation 1:FDA, 2:SPH" />
98     <parameter key="ViscoTreatment" value="2" comment="Viscosity formulation
99     1:Artificial, 2:Laminar+SPS, 3:Constitutive eq."
100    />
101    %Wall boundary viscosity or/and artificial viscosity if ViscoTreatment
102    is 1:Artificial
103    <parameter key="Visco" value="0.05" comment="Viscosity value" />    %
104    Note alpha can depend on the resolution when using artificial
105    viscosity
106    <parameter key="ViscoBoundFactor" value="1" comment="Multiply viscosity
107    value with boundary (default=1)" />
108    <parameter key="DensityDT" value="3" comment="Density Diffusion Term
109    0:None, 1:Molteni, 2:Fourtakas, 3:Fourtakas(full) (default=0)" />
110    <parameter key="DensityDTvalue" value="0.1" comment="DDT value
111    (default=0.1)" />
112    <parameter key="Shifting" value="3" comment="Shifting mode 0:None,
113    1:Ignore bound, 2:Ignore fixed, 3:Full (default=0)" />
114    <parameter key="ShiftCoef" value="-2" comment="Coefficient for shifting
115    computation (default=-2)" />
116    <parameter key="ShiftTFS" value="2.75" comment="Threshold to detect free
117    surface. Typically 1.5 for 2D and 2.75 for 3D (default=0)" />
118    <parameter key="RigidAlgorithm" value="1" comment="Rigid Algorithm
119    0:collision-free, 1:SPH, 2:DEM, 3:Chrono (default=1)" />
120    <parameter key="FtPause" value="0.0" comment="Time to freeze the
121    floatings at simulation start (warmup) (default=0)"
122    units_comment="seconds" />
123    <parameter key="CoefDtMin" value="0.05" comment="Coefficient to
124    calculate minimum time step dtmin=coefdtmin*h/speedsound (default=0.05)"
125    />
126    <parameter key="RelaxationDt" value="0.2" comment="Relaxation parameter
127    for the viscous time step restriction(default=0.2)" />
128    <parameter key="DtIni" value="0" comment="Initial time step. Use 0 to

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100     default use (default=h/speedsound)" units_comment="seconds" />
98     <parameter key="DtMin" value="0" comment="Minimum time step. Use 0 to
101     default use (default=coefdtmin*h/speedsound)" units_comment="seconds" />
99     <parameter key="DtFixed" value="0" comment="Fixed Dt value. Use 0 to
102     disable (default=disabled)" units_comment="seconds" />
100     <parameter key="DtFixedFile" value="NONE" comment="Dt values are loaded
103     from file. Use NONE to disable (default=disabled)"
104     units_comment="milliseconds (ms)" />
101     <parameter key="DtAllParticles" value="0" comment="Velocity of particles
102     used to calculate DT. 1:All, 0:Only fluid/floating (default=0)" />
102     <parameter key="TimeMax" value="6.5" comment="Time of simulation"
103     units_comment="seconds" />
103     <parameter key="TimeOut" value="0.01" comment="Time out data"
104     units_comment="seconds" />
104     <parameter key="PartsOutMax" value="1" comment="%/100 of fluid particles
105     allowed to be excluded from domain (default=1)" units_comment="decimal" />
105     <parameter key="RhopOutMin" value="1000" comment="Minimum rhop valid
106     (default=700)" units_comment="kg/m^3" />
106     <parameter key="RhopOutMax" value="6000" comment="Maximum rhop valid
107     (default=1300)" units_comment="kg/m^3" />
107     <parameter key="XPeriodicIncZ" value="0" comment="Increase of Z with
108     periodic BC" />
108     <simulationdomain comment="Defines domain of simulation (default=Uses
109     minimum and maximum position of the generated particles)">
109         <posmin x="default" y="default" z="default" comment="e.g.: x=0.5,
110         y=default-1, z=default-10%" />
110         <posmax x="default" y="default" z="default + 50%" />
111     </simulationdomain>
112 </parameters>
113 </execution>
114 </case>
115

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