

Dynamic explicit + regenerate option off + displacement boundary condition off

```

111626 *****
111627 *** CONTACT DEFINITIONS ***
111628 *****
111629 *Contact Pair, Interaction=Yarn
111630 Yarn0Upper, Yarn5Lower
111631 *Contact Pair, Interaction=Yarn
111632 Yarn0Upper, Yarn6Lower
111633 *Contact Pair, Interaction=Yarn
111634 Yarn1Upper, Yarn4Lower
111635 *Contact Pair, Interaction=Yarn
111636 Yarn1Upper, Yarn5Lower
111637 *Contact Pair, Interaction=Yarn
111638 Yarn2Upper, Yarn4Lower
111639 *Contact Pair, Interaction=Yarn
111640 Yarn2Upper, Yarn7Lower
111641 *Contact Pair, Interaction=Yarn
111642 Yarn3Upper, Yarn6Lower
111643 *Contact Pair, Interaction=Yarn
111644 Yarn3Upper, Yarn7Lower
111645 *Contact Pair, Interaction=Yarn
111646 Yarn4Upper, Yarn0Lower
111647 *Contact Pair, Interaction=Yarn
111648 Yarn4Upper, Yarn3Lower
111649 *Contact Pair, Interaction=Yarn
111650 Yarn5Upper, Yarn2Lower
111651 *Contact Pair, Interaction=Yarn
111652 Yarn5Upper, Yarn3Lower
111653 *Contact Pair, Interaction=Yarn
111654 Yarn6Upper, Yarn1Lower
111655 *Contact Pair, Interaction=Yarn
111656 Yarn6Upper, Yarn2Lower
111657 *Contact Pair, Interaction=Yarn
111658 Yarn7Upper, Yarn0Lower
111659 *Contact Pair, Interaction=Yarn
111660 Yarn7Upper, Yarn1Lower
111661 *Output, History, Variable=PRESELECT
111662 *Output, Field, Variable=PRESELECT
111663 *Element Output
111664 SDV
111665 *Boundary
111666 *Amplitude, name=Amp-1
111667 0., 0., 2.5e-05, 1.
111668 *Boundary, amplitude=Amp-1

```

The screenshot shows the Abaqus software interface. On the left, a tree view displays 'ALE Adaptive Mesh Constraints' and 'Interactions (16)'. The 'Interactions' list includes YARN-1 through YARN-16. To the right of the tree, a vertical list of displacement boundary conditions (Disp-BC-1 to Disp-BC-9) is shown, each with a red 'X' icon, indicating they are turned off.

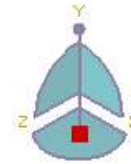
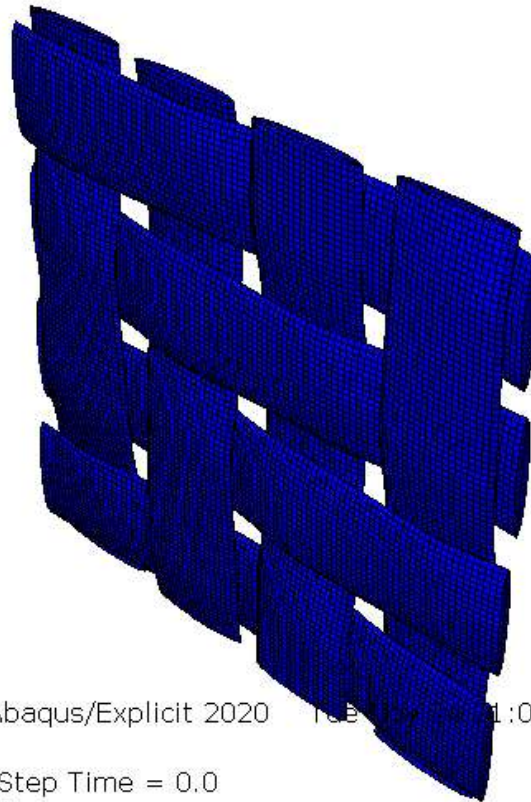
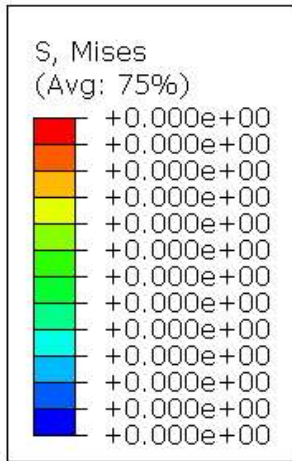
To generate these interactions, the regenerate option in TexGen should be set to off and the .inp file shall contain the Dynamic, Explicit command active. If not Abaqus will not generate the yarn interactions.

```

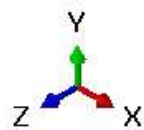
*****
*** STEP ***
*****
*Step, NLGeom=Yes
*Dynamic, Explicit
,2.5e-5
*Bulk Viscosity
0.06, 1.2

```

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Analysis was running for more than 8hrs and solver machine timed out. There was no data on the .ODB file.



ODB: Job-2.odb Abaqus/Explicit 2020 Tue Nov 24 11:00:55 GMT Standard Time 2020
Step: Step-1
Increment 0: Step Time = 0.0
Primary Var: S, Mises

The image shows a software interface for defining boundary conditions on a 3D model. Two dialog boxes, 'Edit Boundary Condition', are open. The first dialog is for 'Disp-BC-1' and the second is for 'Disp-BC-2'. Both are set to 'Displacement/Rotation' type and 'Step-1 (Dynamic, Explicit)'. The 'Region' is 'DUMMY0' and the 'CSYS' is '(Global)'. The distribution is 'Uniform'. The 'Amplitude' is 'AMP-1'. The 'U1' field is set to 0, while 'U2', 'U3', 'UR1', 'UR2', and 'UR3' are set to blue, indicating they are not constrained. A note at the bottom of each dialog states: 'Note: The displacement boundary condition will be reapplied in subsequent steps.' The 3D model on the right shows a green woven mesh structure with orange highlights at the intersections, which are circled in pink. A coordinate system with X and Y axes is visible at the bottom center.

Model Database

- Interaction
- Contact Co
- Contact Init
- Contact Sta
- Constraints
- Connector
- Fields
- Amplitudes
- Loads
- BCs (11)
 - BC-10
 - BC-11
 - Disp-BC-1
 - Disp-BC-2
 - Disp-BC-3
 - Disp-BC-4
 - Disp-BC-5
 - Disp-BC-6
 - Disp-BC-7
 - Disp-BC-8
 - Disp-BC-9
- Predefined Fields
- Remeshing Rules
- Optimization Tasks
- Sketches
- Annotations

VeaveGeo3 Step: Step-1

What are these displacement boundary conditions doing?


```
111669 *** Constrain the nodes closest to the geometrical center of each yarns
111670 2941, 1, 1, 0
111671 2941, 2, 2, 0
111672 2941, 3, 3, 0
111673 8762, 1, 1, 0
111674 8762, 2, 2, 0
111675 8762, 3, 3, 0
111676 14583, 1, 1, 0
111677 14583, 2, 2, 0
111678 14583, 3, 3, 0
111679 20444, 1, 1, 0
111680 20444, 2, 2, 0
111681 20444, 3, 3, 0
111682 26265, 1, 1, 0
111683 26265, 2, 2, 0
111684 26265, 3, 3, 0
111685 32126, 1, 1, 0
111686 32126, 2, 2, 0
111687 32126, 3, 3, 0
111688 37987, 1, 1, 0
111689 37987, 2, 2, 0
111690 37987, 3, 3, 0
111691 43808, 1, 1, 0
111692 43808, 2, 2, 0
111693 43808, 3, 3, 0
111694 *** Apply the repeat vector constraints
111695 Dummy0, 1, 1, 0
111696 Dummy0, 2, 2, 0
111697 Dummy0, 3, 3, 0
111698 Dummy1, 1, 1, 0
111699 Dummy1, 2, 2, 0
111700 Dummy1, 3, 3, 0
111701 *End Step
```

Why are these nodes being constrained?

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Activate Disp-BC and re-run analysis

- BCs (11)
- BC-10
- BC-11
- Disp-BC-1
- Disp-BC-2
- Disp-BC-3
- Disp-BC-4
- Disp-BC-5
- Disp-BC-6
- Disp-BC-7
- Disp-BC-8
- Disp-BC-9

Edit Job

Name: Job-3
Model: WeaveGeo3
Analysis product: Abaqus/Explicit
Description:

Submission | General | Memory | Parallelization | Precision

Job Type

Full analysis
 Recover (Explicit)
 Restart

Run Mode

Background Queue: [dropdown] Host name: [text]
Type: [text]

Submit Time

Immediately
 Wait: [text] hrs. [text] min.
 At: [text] [lightbulb icon]

OK Cancel

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```
The model "WeaveGeo3" has been created.
The part "PART-1" has been imported from the input file.
Discrete field "PART-1_TEXGENORIENTATIONVECTORS" is created for distribution "TEXGENORIENTATIONVECTORS".
WARNING: Abaqus/CAE allows only the first node set in a *EQUATION definition to contain more than one node. Node set BOUND0B violates this rule. The
equation using this node set will not be imported. This message is only printed once, so please check all other *EQUATION definitions.
The interaction property "YARN" has been created.
KeyError: 'bulkviscosity' This occurred while processing keyword *BULKVISCOSITY.
```

```
WARNING: The following keywords/parameters are not yet supported by the input file reader:
```

```
-----
*INITIALCONDITIONS, TYPE=SOLUTION
```

```
*NSET, UNSORTED
```

```
The model "WeaveGeo3" has been imported from an input file.
```

```
Please scroll up to check for error and warning messages.
```

```
A new model database has been created.
```

```
The model "Model-1" has been created.
```

```
The model "WeaveGeo3" has been created.
```

```
The part "PART-1" has been imported from the input file.
```

```
Discrete field "PART-1_TEXGENORIENTATIONVECTORS" is created for distribution "TEXGENORIENTATIONVECTORS".
```

```
WARNING: Abaqus/CAE allows only the first node set in a *EQUATION definition to contain more than one node. Node set BOUND0B violates this rule. The
equation using this node set will not be imported. This message is only printed once, so please check all other *EQUATION definitions.
```

```
The interaction property "YARN" has been created.
```

```
The interaction "YARN-1" has been created.
```

```
The interaction "YARN-2" has been created.
```

```
The interaction "YARN-3" has been created.
```

```
The interaction "YARN-4" has been created.
```

```
The interaction "YARN-5" has been created.
```

```
The interaction "YARN-6" has been created.
```

```
The interaction "YARN-7" has been created.
```

```
The interaction "YARN-8" has been created.
```

```
The interaction "YARN-9" has been created.
```

```
The interaction "YARN-10" has been created.
```

```
The interaction "YARN-11" has been created.
```

```
The interaction "YARN-12" has been created.
```

```
The interaction "YARN-13" has been created.
```

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```
The interaction "YARN-14" has been created.  
The interaction "YARN-15" has been created.  
The interaction "YARN-16" has been created.
```

```
WARNING: The following keywords/parameters are not yet supported by the input file reader:
```

```
-----  
*INITIALCONDITIONS, TYPE=SOLUTION  
*NSET, UNSORTED  
The model "WeaveGeo3" has been imported from an input file.  
Please scroll up to check for error and warning messages.  
A new model database has been created.  
The model "Model-1" has been created.  
The model database "H:\07_Dissertation\07_AqSETUP\WeaveGeo3.cae" has been opened.  
The job "Job-3" has been created.  
The job input file "Job-3.inp" has been submitted for analysis.  
Error in job Job-3: A BOUNDARY CONDITION HAS BEEN SPECIFIED ON NODE SET ASSEMBLY_DUMMY0 BUT THIS NODE SET IS NOT ACTIVE IN THE MODEL  
Error in job Job-3: A BOUNDARY CONDITION HAS BEEN SPECIFIED ON NODE SET ASSEMBLY_DUMMY0 BUT THIS NODE SET IS NOT ACTIVE IN THE MODEL  
Error in job Job-3: A BOUNDARY CONDITION HAS BEEN SPECIFIED ON NODE SET ASSEMBLY_DUMMY0 BUT THIS NODE SET IS NOT ACTIVE IN THE MODEL  
Error in job Job-3: A BOUNDARY CONDITION HAS BEEN SPECIFIED ON NODE SET ASSEMBLY_DUMMY1 BUT THIS NODE SET IS NOT ACTIVE IN THE MODEL  
Error in job Job-3: A BOUNDARY CONDITION HAS BEEN SPECIFIED ON NODE SET ASSEMBLY_DUMMY1 BUT THIS NODE SET IS NOT ACTIVE IN THE MODEL  
Error in job Job-3: A BOUNDARY CONDITION HAS BEEN SPECIFIED ON NODE SET ASSEMBLY_DUMMY1 BUT THIS NODE SET IS NOT ACTIVE IN THE MODEL  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY0 HAS NOT BEEN DEFINED  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY0 HAS NOT BEEN DEFINED  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY0 HAS NOT BEEN DEFINED  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY1 HAS NOT BEEN DEFINED  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY1 HAS NOT BEEN DEFINED  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY1 HAS NOT BEEN DEFINED  
Error in job Job-3: NODE SET ASSEMBLY_DUMMY1 HAS NOT BEEN DEFINED  
Job Job-3: Analysis Input File Processor aborted due to errors.  
Error in job Job-3: Analysis Input File Processor exited with an error.  
Job Job-3 aborted due to errors.
```

The issue may be related with these dummy nodes. They may be related with displacement BC 1 to 9.