

## Cellblocks new and refactorized errors

Referencing a non-existent sub-region `1\_hendecagonalPrisms`

**Refactorized error.** Previously, no list of existing region / sub-region was present, and the error mentioned a non-existing "cellBlocks" wrapper in *ElementRegions* rather than a region / sub-region issue.

```
***** LOCATION:
/data/pau901/VDG_GSI/MelvinREY/WorkEnv/GEOSX_repos/GEOSX_line3/src/coreComponents/mesh/CellElementRegion.cpp:87
***** Controlling expression (should be false): true
***** Rank 0: burdens (nl_multiphase_with_well_reservoir_badreg1.xml, 1.205): region or sub-region '1_hendecagonalPrisms' not found.
Available region list: 1, 2, 3, 4, 5
Available sub-region list: 4_tetrahedra, 5_tetrahedra, 3_tetrahedra, 1_tetrahedra, 2_tetrahedra, 4_pyramids, 5_pyramids, 3_pyramids, 1_pyramids, 2_pyramids, 4_hexahedra, 5_hexahedra, 3_hexahedra, 1_hexahedra, 2_hexahedra

** StackTrace of 7 frames **
Frame 0: geos::ElementRegionManager::generateMesh(geos::CellBlockManagerABC const&)
Frame 1: geos::ProblemManager::generateMeshLevel(geos::MeshLevel&, geos::CellBlockManagerABC const&, geos::dataRepository::Group const*, LvArray::ArrayView<std::__cxx11::basic_string<char, std::char_traits<char>, std::allocator<char> > const, 1, 0, int, LvArray::ChaiBuffer> const&)
Frame 2: geos::ProblemManager::generateMesh()
Frame 3: geos::ProblemManager::problemSetup()
Frame 4: geos::GeosxState::initializeDataRepository()
Frame 5: main
Frame 6: __libc_start_main
Frame 7: /data/pau901/VDG_GSI/MelvinREY/WorkEnv/GEOSX_repos/GEOSX_line3/build-pangea2-intlog-gcc@8.3.0-release/bin/geosx
=====
```

Using the same sub-region **1\_hexahedra** in two **CellElementRegion** (named respectively **reservoir** and **burdens**):

**New error.** Previously GEOS started simulating without any warning.

```
***** LOCATION:
/data/pau901/VDG_GSI/MelvinREY/WorkEnv/GEOSX_repos/GEOSX_line3/src/coreComponents/mesh/ElementRegionManager.cpp:198
***** Controlling expression (should be false): true
***** Rank 0: The sub-region '1_hexahedra' from region '1' has been referenced multiple times:
- reservoir/cellBlocks (nl_multiphase_with_well_reservoir_doubledsubreg2.xml, 1.198)
- burdens/cellBlocks (nl_multiphase_with_well_reservoir_doubledsubreg2.xml, 1.207)

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=====
```

Forgetting to reference the region **1**, or its sub-region **1\_hexahedra** (both cases return the same error):

**Refactorized error.** Previously, the region / sub-region was not mentioned and the error was mixed with the "Invalid mesh" one.

```

***** LOCATION:
/data/pau901/VDG_GSI/MelvinREY/WorkEnv/GEOSX_repos/GEOSX_line3/src/coreComponents/mesh/ElementRegionManager.cpp:214
***** Controlling expression (should be false): true
***** Rank 0: The subRegion '1_hexahedra' from region '1' has not been referenced.
Please add this region or subRegion in an existing 'cellBlocks', or consider creating a new
CellElementRegion to describe your model.

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geos::dataRepository::Group const*, LvArray::ArrayView<std::__cxx11::basic_string<char,
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=====

```

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Mixing the new **all** keyword with more region / sub-region specification (like **cellBlocks="{ 1, all }"**):

#### New error

```

***** LOCATION:
/data/pau901/VDG_GSI/MelvinREY/WorkEnv/GEOSX_repos/GEOSX_line3/src/coreComponents/mesh/CellElementRegion.cpp:98
***** Controlling expression (should be false): cellBlockName ==
viewKeyStruct::selectAllCellBlocksString()
***** Rank 0: burdens/cellBlocks (nl_multiphase_with_well_reservoir_autoreg2.xml, 1.207): The keyword
'all' is useful to include all existing cells in a CellElementRegion, it should be used alone in a
unique CellElementRegion.

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Frame 1: geos::ProblemManager::generateMeshLevel(geos::MeshLevel&, geos::CellBlockManagerABC const&,
geos::dataRepository::Group const*, LvArray::ArrayView<std::__cxx11::basic_string<char,
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```

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