



## **A • Reservoir model initialization**

There are two ways to build a Reservoir model in Rubis from geomodeler inputs for dynamic analyses.

- Load the geomodeler GRDECL file in "Spatial Data"
- It can be defined zone by zone

## **B • Loading features**

- In "Spatial Data", "geomodeler grid" tab load Grdecl file
- In "Geometry" check box for "Init from Geomodeler"
- Contour: it is a boundary polygon data file that is generated automatically from the geomodeler active cells.
- Volume properties: the reservoir structure and properties can be input from GRDECL or CMG format file, generated by a geomodeler.
- We still need to define the PVT, the relative permeability and the initial state equilibrium separately.

## **C • Contour specific options**

- The boundary polygon is usually of high resolution. This high number of points can impede performance by creating numerous small cells surrounding the reservoir.
- The user can reduce the number of nodes in the dialog accessed by double clicking on the contour. There is little to no effect for the reservoir model.
- Not compulsory, but can spare the user the need to redefine manually the reservoir boundary.

## **D • Volumes properties specific options**

- Format accepted is standard from geomodel. Following keywords are scanned through:

| <i>GRDECL files</i> | <i>CMG files</i> |  |
|---------------------|------------------|--|
| GRIDUNIT            |                  | length unit (may not always be present)            |
| SPECGRID            | GRID             | <b>indicates the size of the corner point grid</b> |
| COORD               | CORNERS          | <b>vertex coordinates</b>                          |
| ZCORN               |                  | <b>vertex vertical coordinates</b>                 |
| ACTNUM              | NULL             | indicates whether the given cell is active or not  |
| PERMEABILITY        | PERMI            | bulk permeability                                  |
| PORO                | PORO             | porosity   |

- Geomodeler coordinates will be also loaded into Rubis. The user can use this to pinpoint well location.
- Rubis can understand non uniform reservoir boundary over depth (different boundary contour for each layer for example) this is read from ACTNUM and will be used to activate or deactivate cells using Net to gross parameter.

## **E • Practical exercise**

Initialize the model using the following files:

- Example.GRDECL
- Generate the model grid to visualize the properties. Go back to contour and load at full resolution (same number of nodes as before simplification). Notice the difference in cells number and observe the cells at reservoir limits.
- The properties dialog is used to input multiplying factors

## **F • Manual load features (seen in previous exercise)**

You could also load individually the following files from geomodeler:

- Boundary polygon map
- Top maps, thickness maps
- Rock properties maps