Step 4 — Override default values

- The syntax for overriding the default scope assigned parameter values is as follows
  - override = operation_name label parameter_name value
- Here parameter_name is a parameter from the scope file and value is the new value that should be assigned to the given operation when working on the mesh phase with the specified label.
- As an example consider this
  - override = interface_refinement 0 max_iterations 0
- Here we tell GRIT to turn off interface refinement on phase with label=0. This is done by setting the scope parameter name “max_iterations” to the new value 0. Hence GRIT will perform 0 iterations of the interface_refinement for phase 0.

More Override Examples

- Often one wish to override refinement and coarsening thresholds to control the element sizes in the mesh. This may look as follows
    - override = refinement 1 lower_threshold 0.05
    - override = coarsening 1 upper_threshold 0.001
- Notice that this specify refinement and coarsening for phase with label = 1. The parameter names lower_threshold and upper_threshold requires some explanation.
- Operations using lower/upper threshold values are based on what GRIT calls a threshold quality measure. It means that if the current quality, q, of a given mesh element (edges for coarsening and refinement) are such that
    - q < lower_threshold then we have a good mesh element and do nothing
    - q > upper_threshold then we have a good mesh element and do nothing
    - lower_threshold <= q <= upper_threshold then we have a bad mesh element and perform the operation
- For refinement upper_threshold is always set to infinity, and for coarsening lower_threshold is set to -infinity. For refinement and coarsening it is important that refinement lower_threshold is sufficiently larger than coarsening upper_threshold. As a rule of thumb make refinement lower_threshold > 2 coarsening upper_threshold. This is not guaranteed to work but usually prevents refinement and coarsening operations to counter act each other.