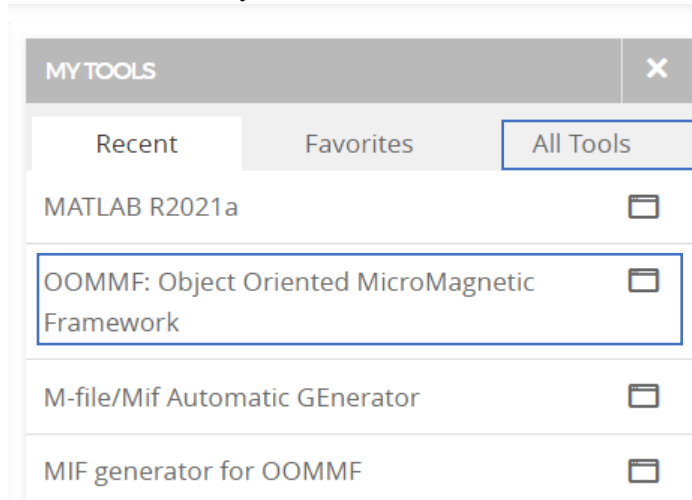


Standard procedure using OOMMF on nanoHUB for MNWs

1. Enter from your nanoHUB dashboard

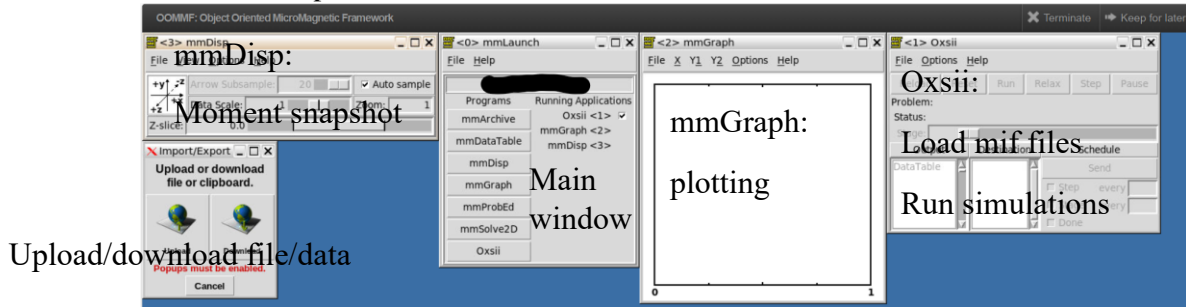


First time user: search from all tools

OOMMF program

Useful tools to generate .mif files

2. Windows-like platform



Upload/download file/data

3. Example .mif file to generate hysteresis loop of Fe MNW (50nm by 3000nm):

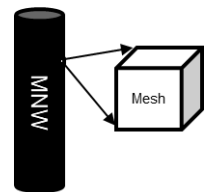
```

proc Cylinder { x y z } {
    set xrad [expr {2.*$x-1.}]
    set yrad [expr {2.*$y-1.}]
    set test [expr {$xrad*$xrad+$yrad*$yrad}]
    if {$test>1.0} {return 0}
    return 1
}
Specify Oxs_ScriptAtlas:atlas {
    xrange {0 50e-09}
    yrange {0 50e-09}
    zrange {0 3000e-9}
    regions {cylinder}
    script Cylinder
}
Specify Oxs_RectangularMesh:mesh {
    cellsize {2.5e-09 2.5e-09 6e-08}
    atlas :atlas
}
    
```

shape

size

mesh



Exchange parameter

```
Specify Oxs_UniformExchange {  
  A 0.81e-11  
}
```

```
Specify Oxs_MinDriver {  
  basename Cylinder  
  evolver Oxs_CGEvolve  
  stopping_mxHxm 0.1  
  mesh :mesh  
  Ms { Oxs_AtlasScalarField {  
    atlas :atlas  
    values {cylinder 1700e3 Ms  
           universe 0}  
  }  
}  
  m0 { Oxs_AtlasVectorField {  
    atlas :atlas  
    values {cylinder {0 0 0}  
           universe {0 0 0}}  
    norm 1.0  
  }  
}}
```

External field in mT

```
Specify Oxs_UZeeman [subst {  
  multiplier [expr {0.001/$mu0}]  
  Hrange {  
    { 0 0 30      0 0 -30 300}  
    { 0 0 -30     0 0 30 300}  
  }  
}]
```

4. Output/data

Download .odt numerical data from mmGraph and .ovf moment data from mmDisp. The graph data can be processed by any data processing software. The magnetic moment data can be read and visualized by Muview(3D) or OOMMF mmDisp itself (2D) (shown below)

