CIBC Workshop 2009

SCIRun Part 2: Fields and Vis

Fields: Mesh + Data

Geometry

Regular

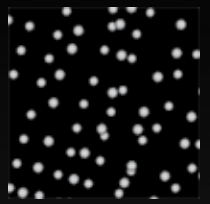
Irregular

Data

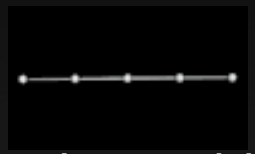
int, float, double, …

Vector, Tensor, …

Data_at (center)

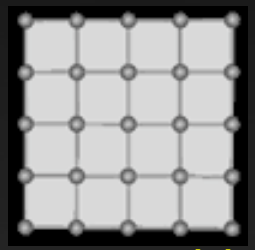


PointCloudField

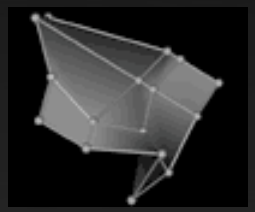


ScanlineField

CurveField

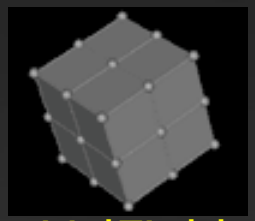


ImageField

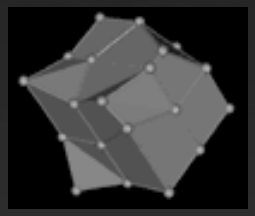


QuadSurfField

TriSurfField



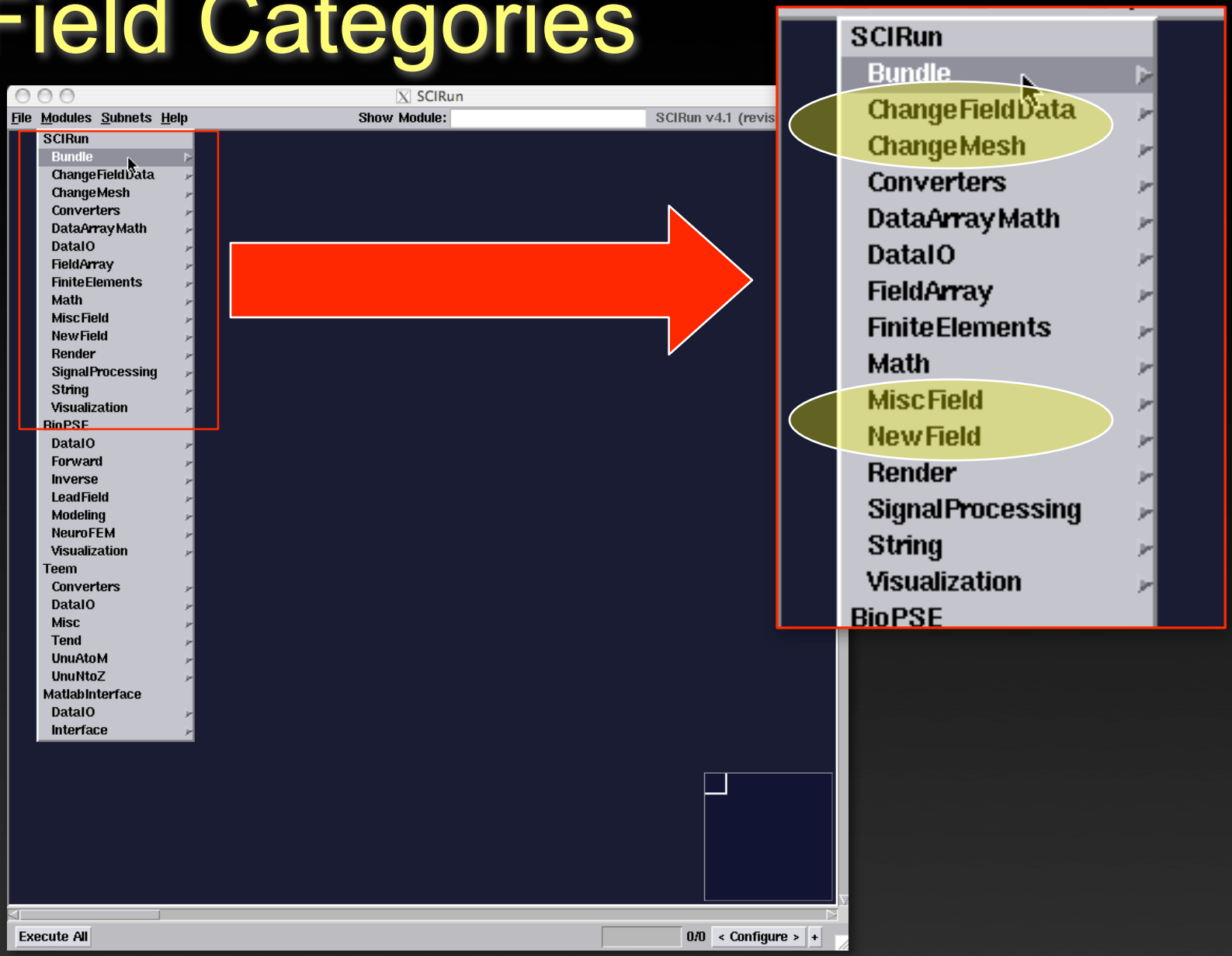
LatVolField

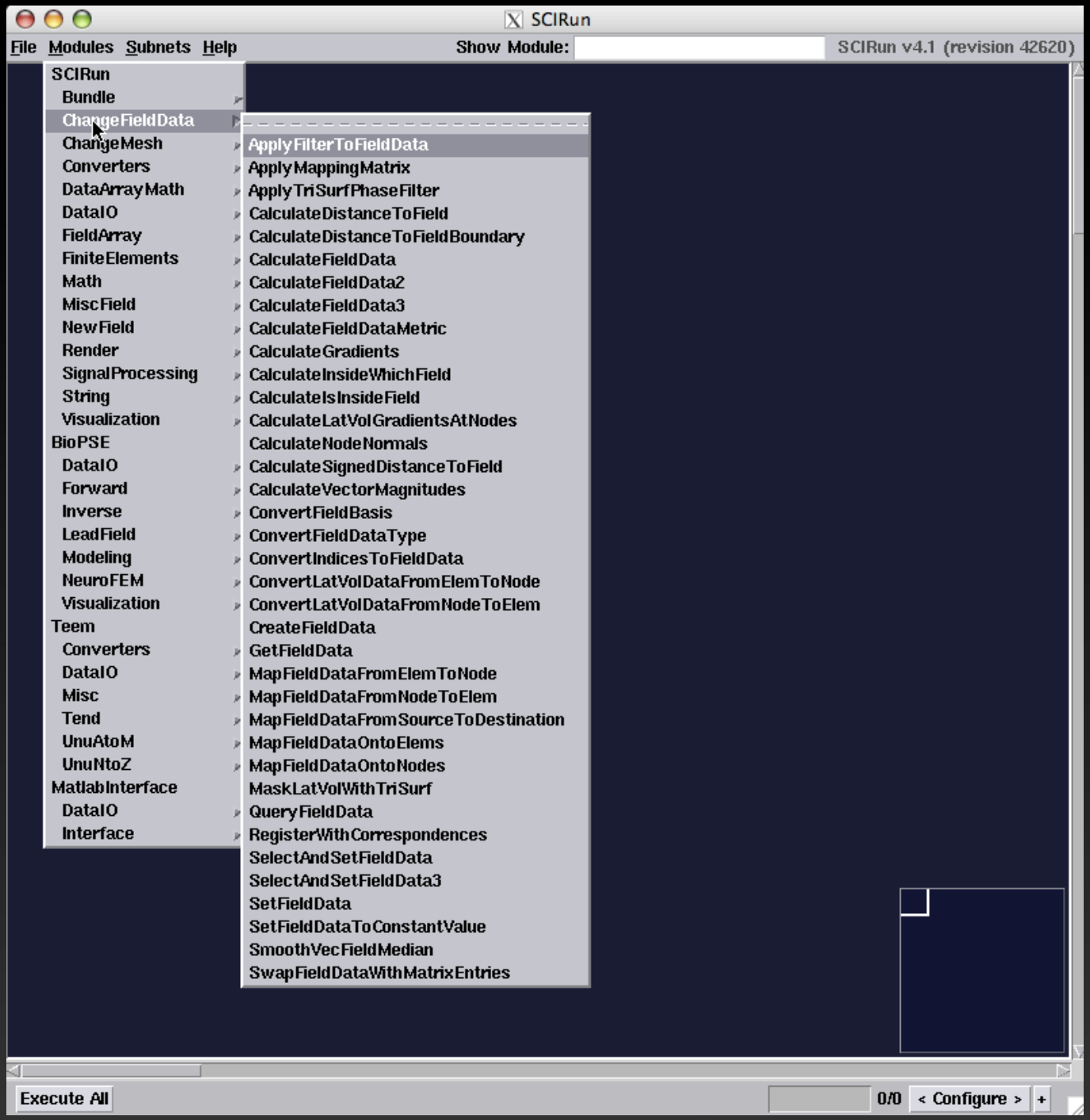


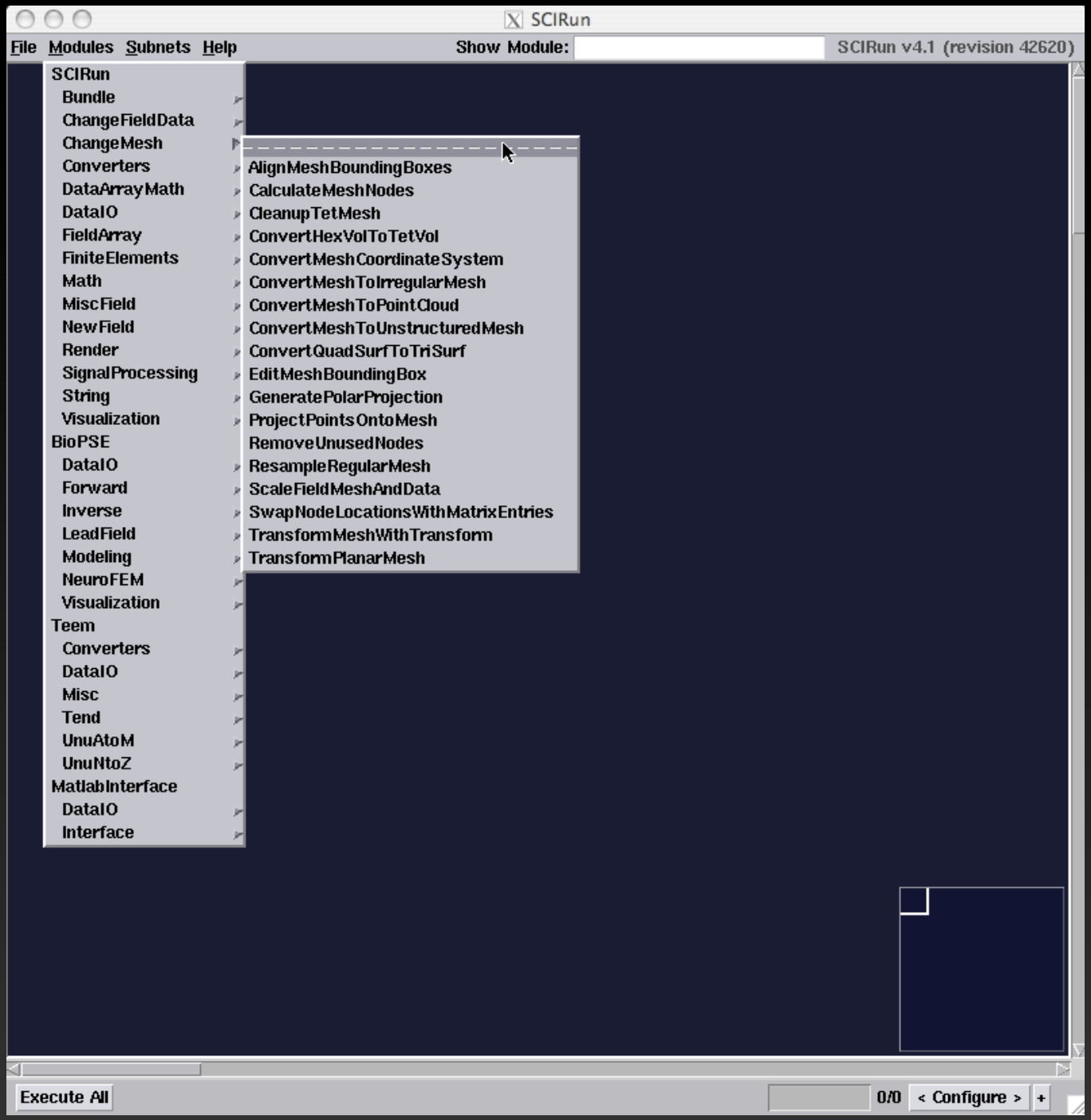
HexVolField

TetVolField

Field Categories




SCIRun
File Modules Subnets Help
Show Module:
SCIRun v4.1 (revision 42620)
SCIRun
Bundle
ChangeFieldData
ChangeMesh
Converters
DataArrayMath
DataIO
FieldArray
FiniteElements
Math
MiscField
NewField
Render
SignalProcessing
String
Visualization
BioPSE
DataIO
Forward
Inverse
LeadField
Modeling
NeuroFEM
Visualization
Teem
Converters
DataIO
Misc
Tend
UnuAtoM
UnuNtoZ
MatlabInterface
DataIO
Interface
ApplyFilterToFieldData
ApplyMappingMatrix
ApplyTriSurfPhaseFilter
CalculateDistanceToField
CalculateDistanceToFieldBoundary
CalculateFieldData
CalculateFieldData2
CalculateFieldData3
CalculateFieldDataMetric
CalculateGradients
CalculateInsideWhichField
CalculateIsInsideField
CalculateLatVolGradientsAtNodes
CalculateNodeNormals
CalculateSignedDistanceToField
CalculateVectorMagnitudes
ConvertFieldBasis
ConvertFieldDataType
ConvertIndicesToFieldData
ConvertLatVolDataFromElemToNode
ConvertLatVolDataFromNodeToElem
CreateFieldData
GetFieldData
MapFieldDataFromElemToNode
MapFieldDataFromNodeToElem
MapFieldDataFromSourceToDestination
MapFieldDataOntoElems
MapFieldDataOntoNodes
MaskLatVolWithTriSurf
QueryFieldData
RegisterWithCorrespondences
SelectAndSetFieldData
SelectAndSetFieldData3
SetFieldData
SetFieldDataToConstantValue
SmoothVecFieldMedian
SwapFieldDataWithMatrixEntries
Execute All
0/0
< Configure >
+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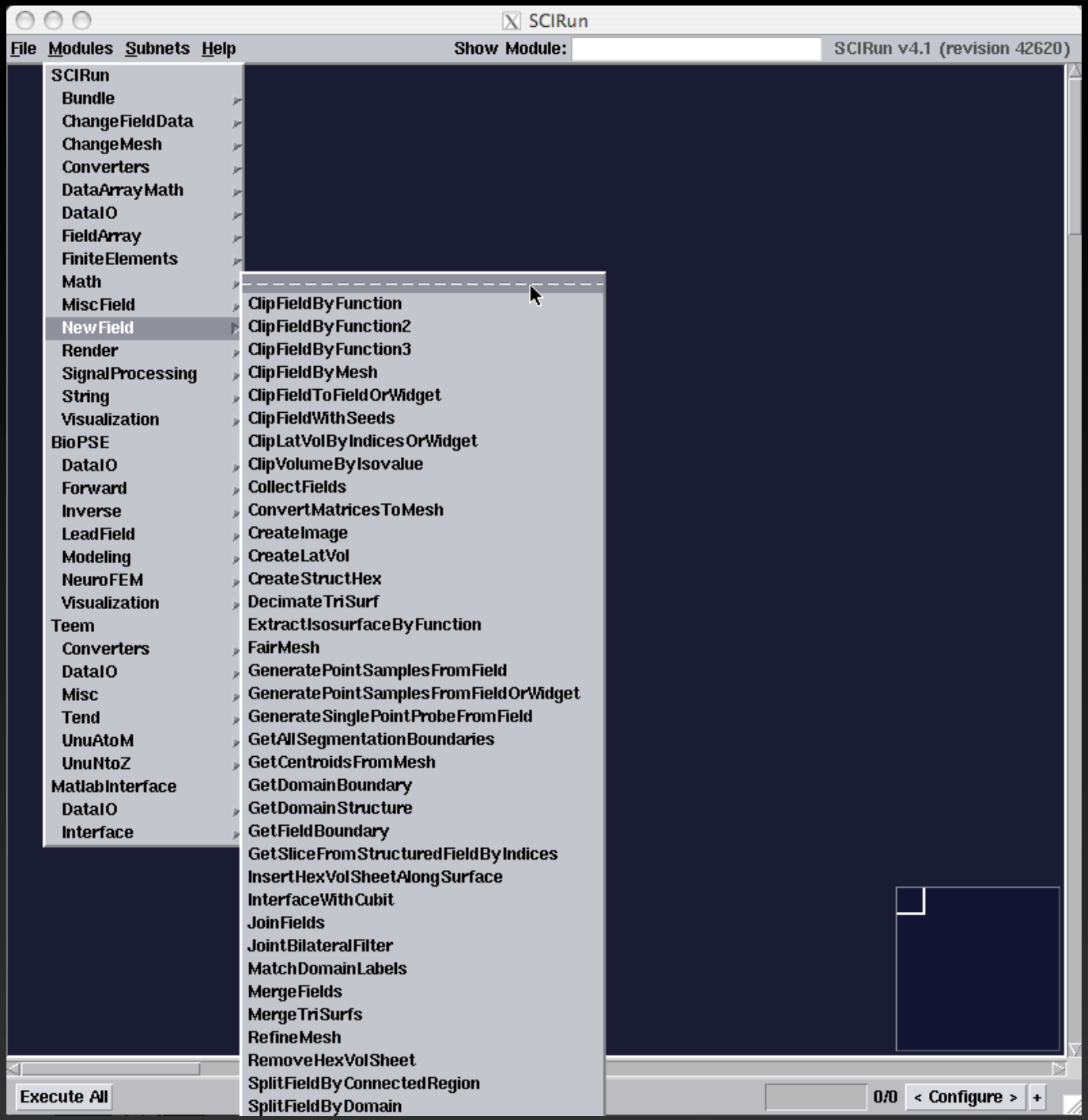
DataIO
Misc
Tend
UnuAtoM
UnuNtoZ
MatlabInterface
DataIO
Interface
AlignMeshBoundingBoxes
CalculateMeshNodes
CleanupTetMesh
ConvertHexVolToTetVol
ConvertMeshCoordinateSystem
ConvertMeshToIrregularMesh
ConvertMeshToPointCloud
ConvertMeshToUnstructuredMesh
ConvertQuadSurfToTriSurf
EditMeshBoundingBox
GeneratePolarProjection
ProjectPointsOntoMesh
RemoveUnusedNodes
ResampleRegularMesh
ScaleFieldMeshAndData
SwapNodeLocationsWithMatrixEntries
TransformMeshWithTransform
TransformPlanarMesh
Execute All
0/0
< Configure >
+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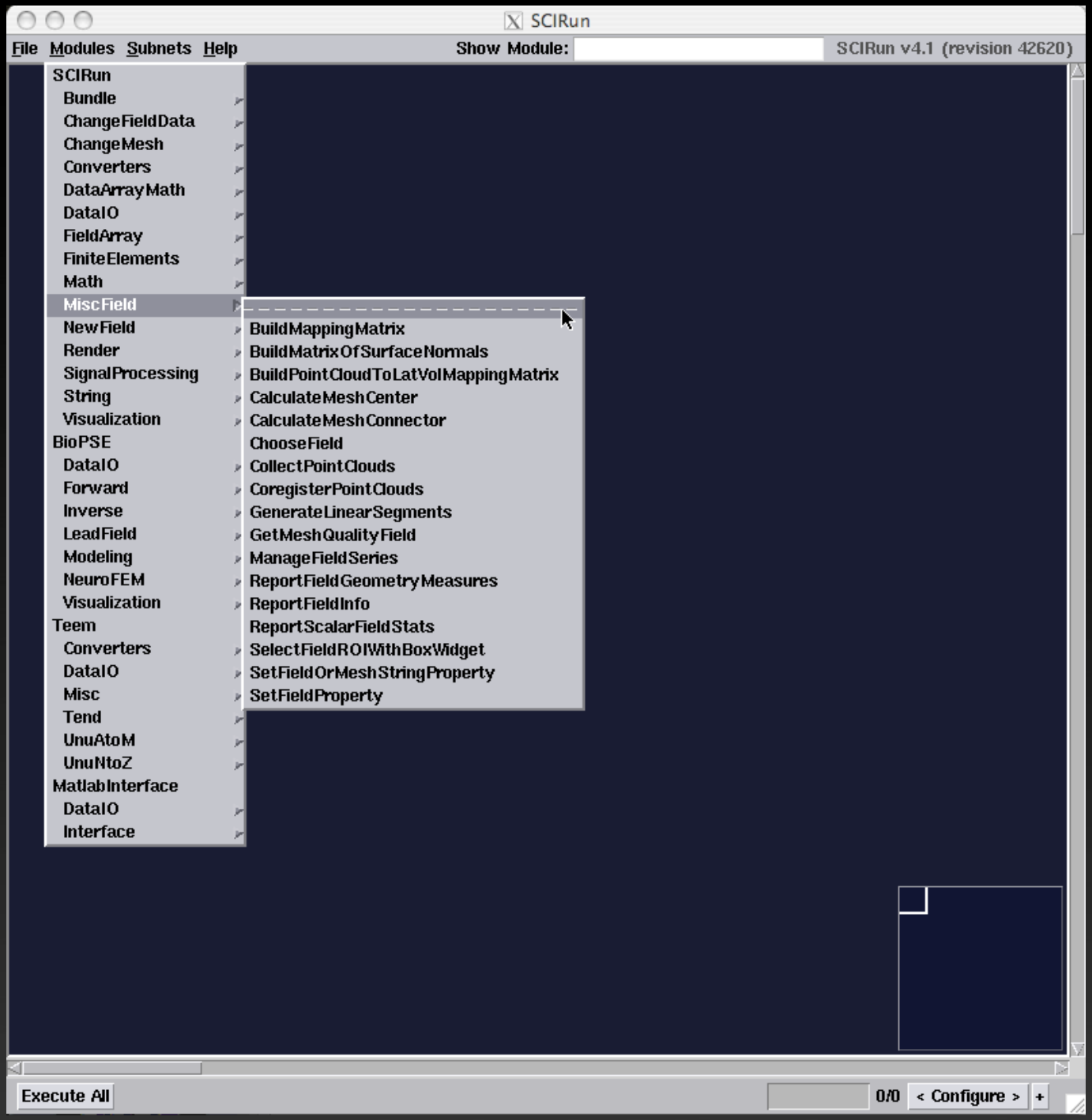
Visualization
Teem
Converters
DataIO
Misc
Tend
UnuAtoM
UnuNtoZ
MatlabInterface
DataIO
Interface
ClipFieldByFunction
ClipFieldByFunction2
ClipFieldByFunction3
ClipFieldByMesh
ClipFieldToFieldOrWidget
ClipFieldWithSeeds
ClipLatVolByIndicesOrWidget
ClipVolumeByIsovalue
CollectFields
ConvertMatricesToMesh
CreateImage
CreateLatVol
CreateStructHex
DecimateTriSurf
ExtractIsosurfaceByFunction
FairMesh
GeneratePointSamplesFromField
GeneratePointSamplesFromFieldOrWidget
GenerateSinglePointProbeFromField
GetAllSegmentationBoundaries
GetCentroidsFromMesh
GetDomainBoundary
GetDomainStructure
GetFieldBoundary
GetSliceFromStructuredFieldByIndices
InsertHexVolSheetAlongSurface
InterfaceWithCubit
JoinFields
JointBilateralFilter
MatchDomainLabels
MergeFields
MergeTriSurfs
RefineMesh
RemoveHexVolSheet
SplitFieldByConnectedRegion
SplitFieldByDomain
Execute All
0/0
< Configure >
+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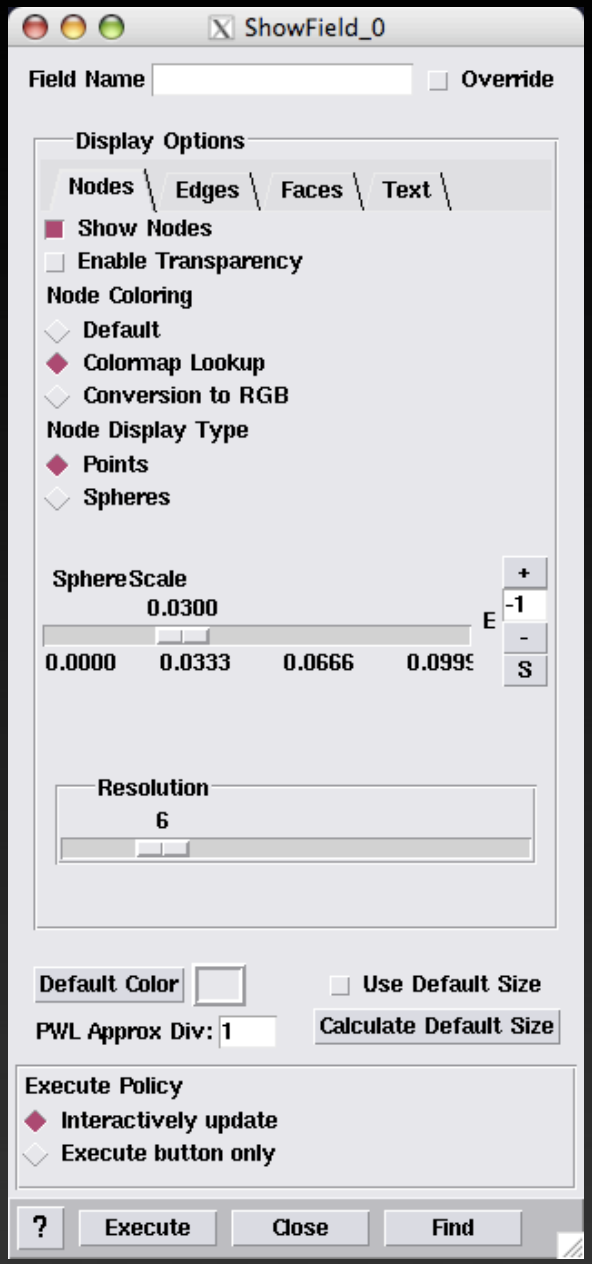
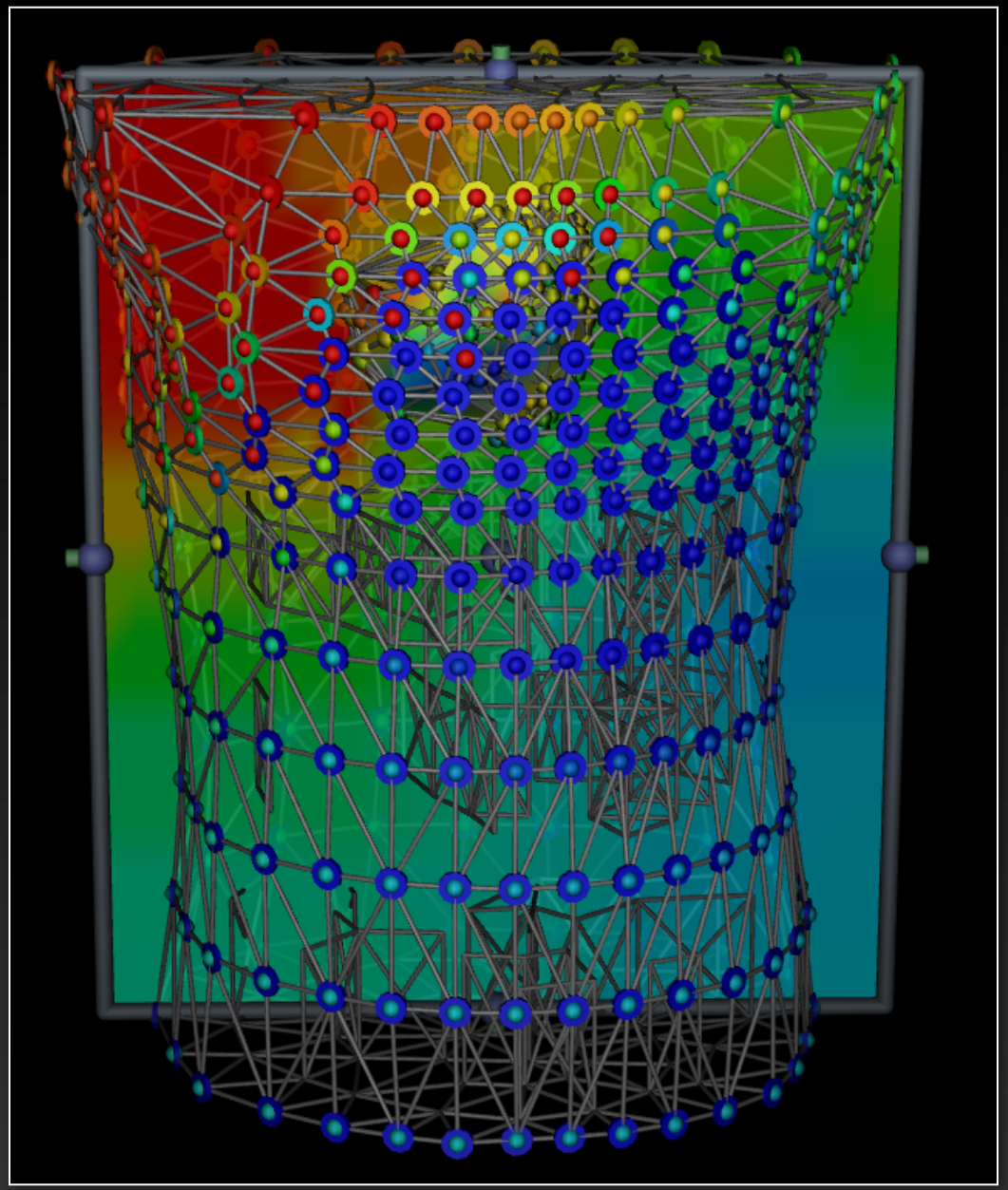
Converters
DataIO
Misc
Tend
UnuAtoM
UnuNtoZ
MatlabInterface
DataIO
Interface
BuildMappingMatrix
BuildMatrixOfSurfaceNormals
BuildPointCloudToLatVolMappingMatrix
CalculateMeshCenter
CalculateMeshConnector
ChooseField
CollectPointClouds
CoregisterPointClouds
GenerateLinearSegments
GetMeshQualityField
ManageFieldSeries
ReportFieldGeometryMeasures
ReportFieldInfo
ReportScalarFieldStats
SelectFieldROIWithBoxWidget
SetFieldOrMeshStringProperty
SetFieldProperty
Execute All
0/0
< Configure >
+

ShowField

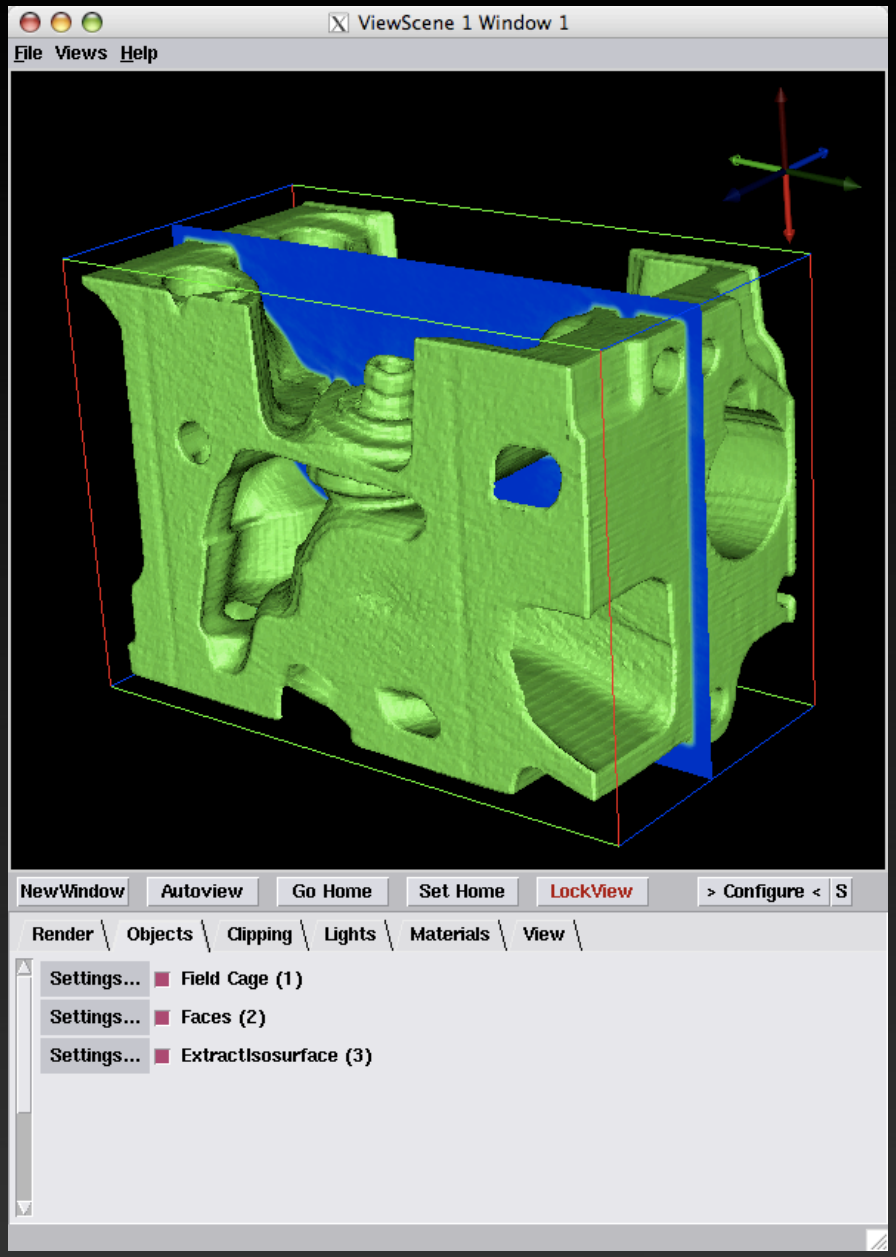

ShowField_0
Field Name
Override
Display Options
Nodes
Edges
Faces
Text
Show Nodes
Enable Transparency
Node Coloring
Default
Colormap Lookup
Conversion to RGB
Node Display Type
Points
Spheres
SphereScale
0.0300
0.0000
0.0333
0.0666
0.099
+
-1
-
S
Resolution
6
Default Color
Use Default Size
PWL Approx Div:
1
Calculate Default Size
Execute Policy
Interactively update
Execute button only
?
Execute
Close
Find



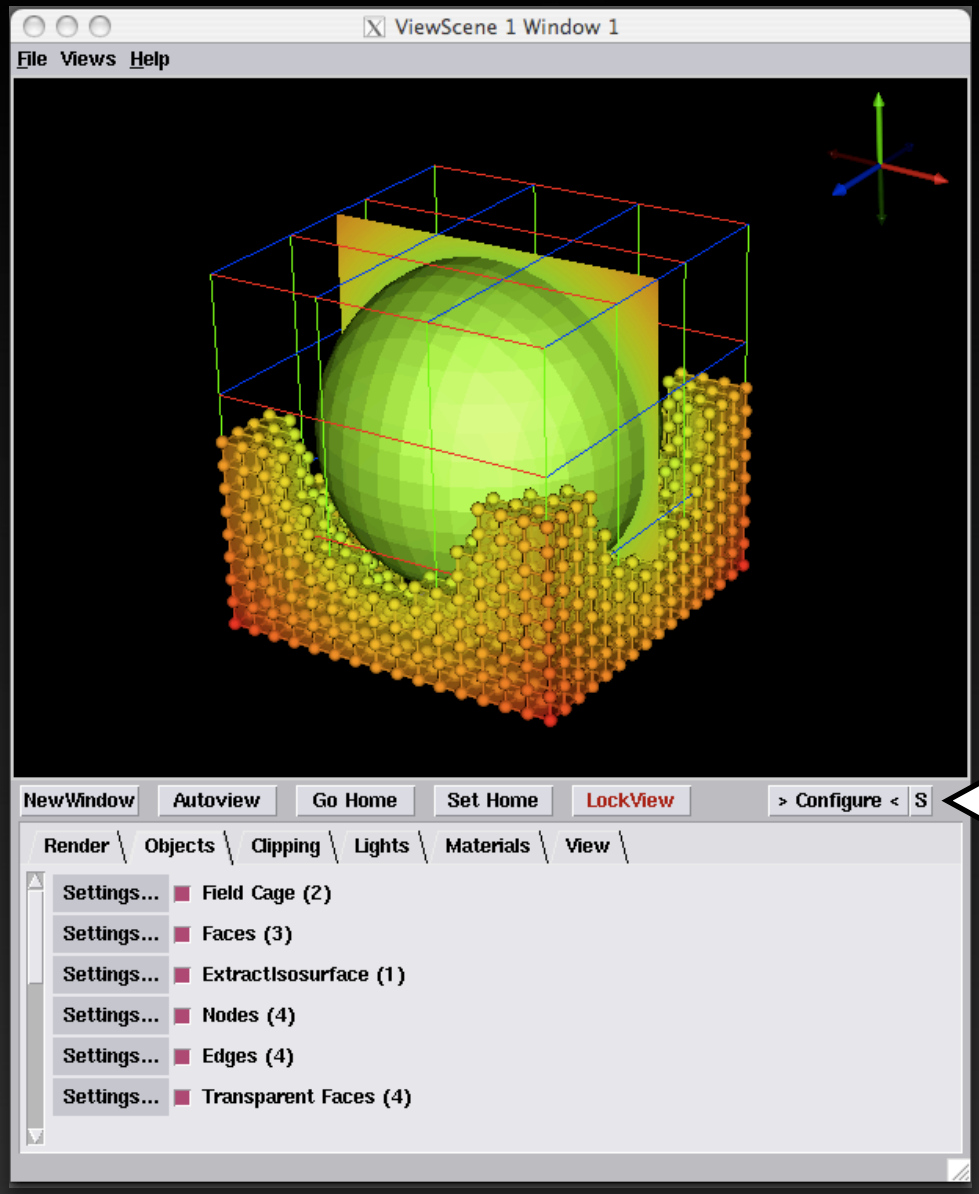
ShowField / ViewScene

ShowField / ViewScene examples

ViewScene

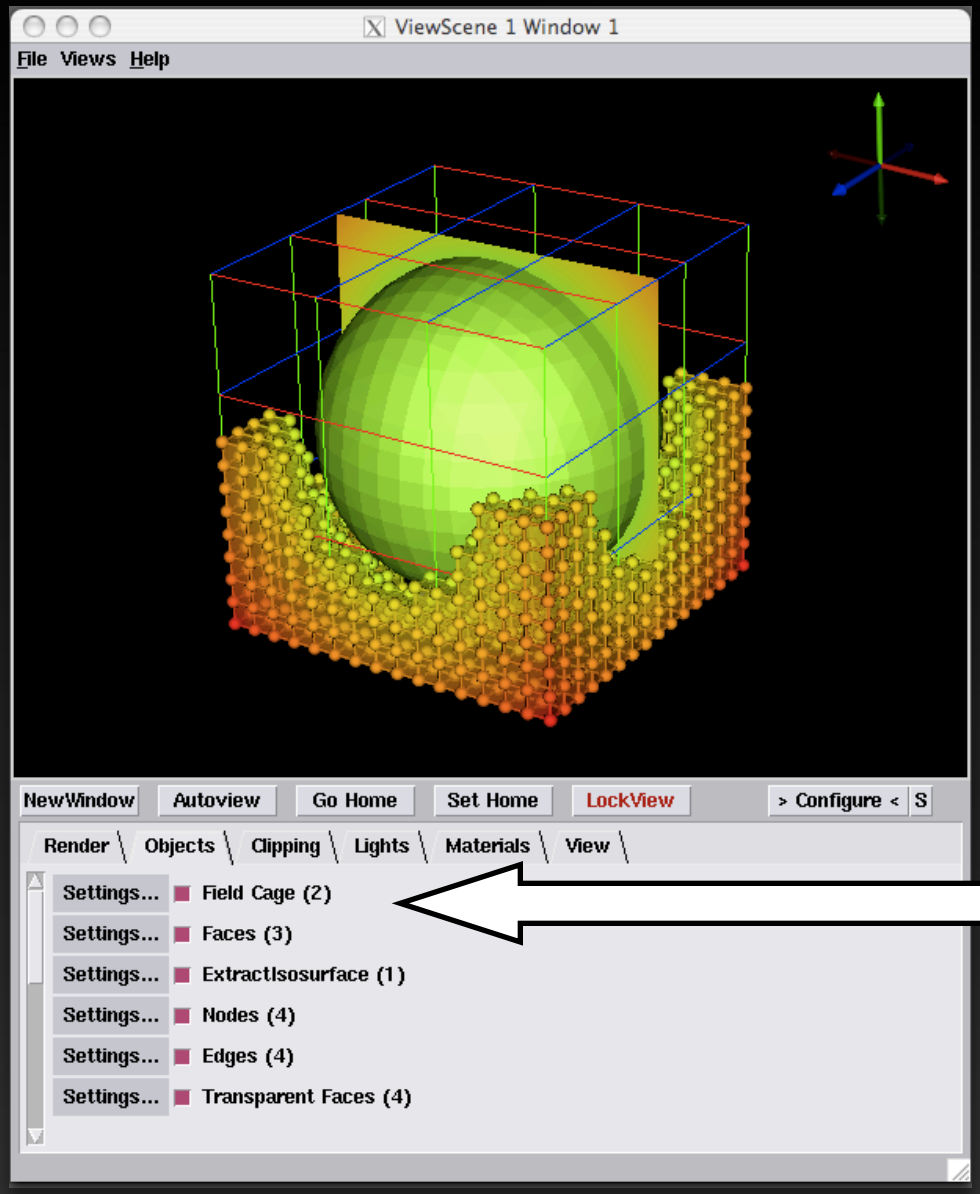

ViewScene 1 Window 1
File Views Help
NewWindow
Autoview
Go Home
Set Home
LockView
> Configure <
S
Render
Objects
Clipping
Lights
Materials
View
Settings...
Field Cage (1)
Settings...
Faces (2)
Settings...
ExtractIsosurface (3)

ViewScene



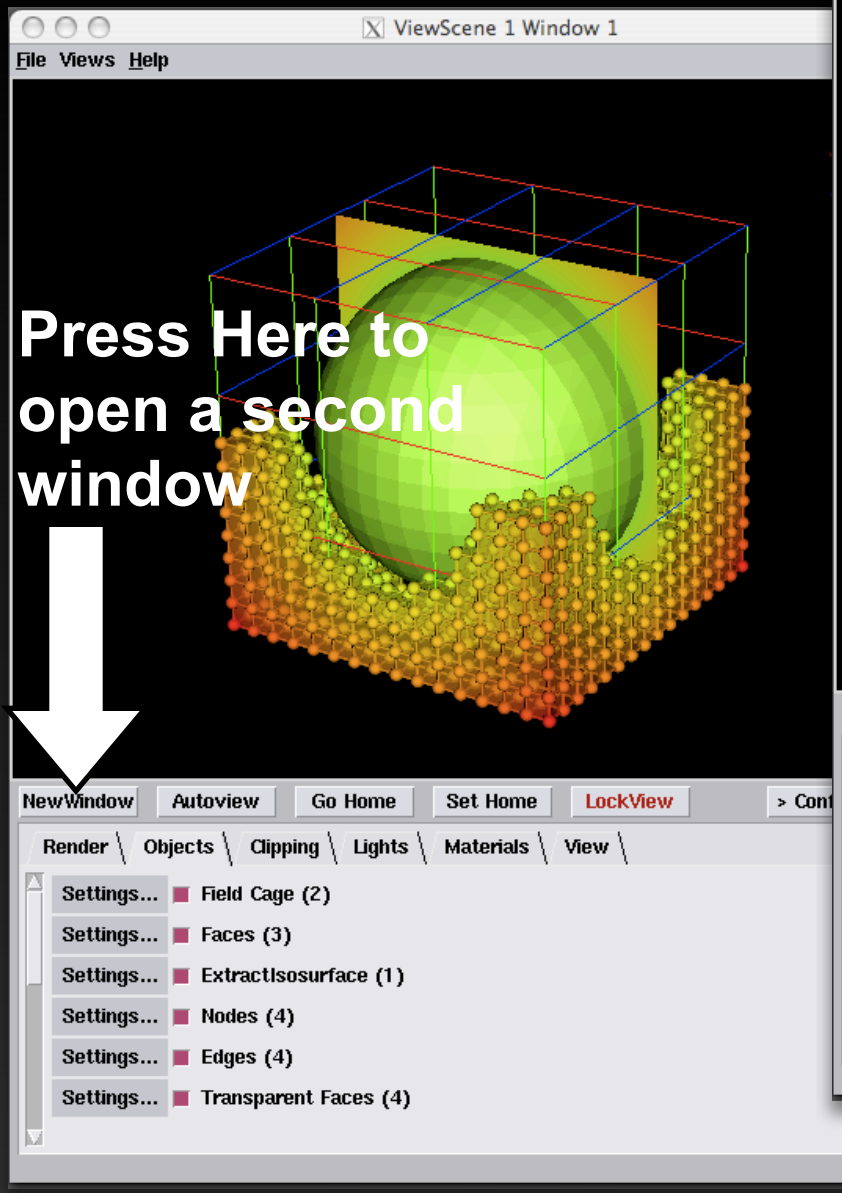
Press here to open configuration tab

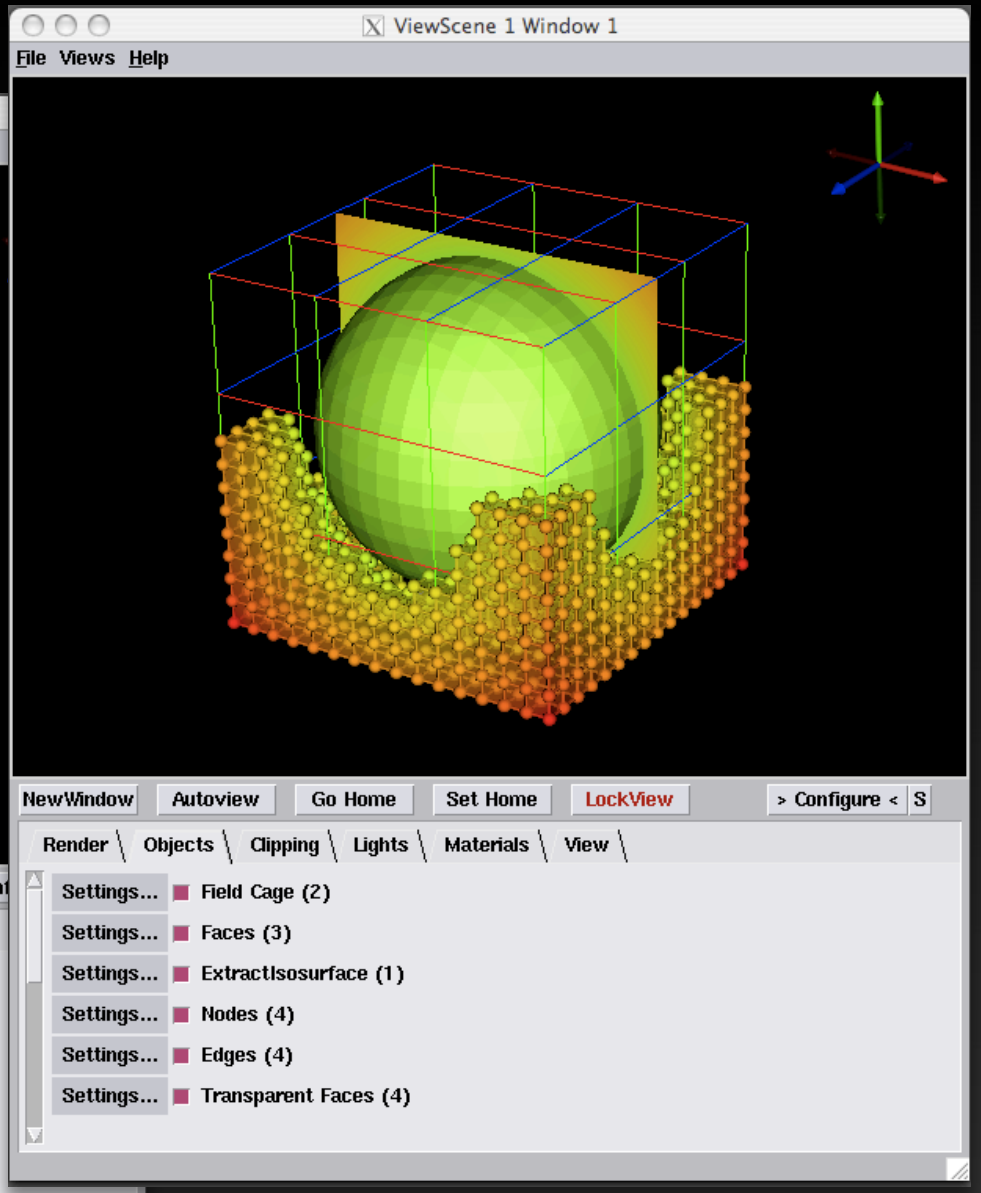
ViewScene



Select Visual components that are displayed

ViewScene


ViewScene 1 Window 1
File Views Help
Press Here to open a second window
NewWindow
Autoview
Go Home
Set Home
LockView
Render
Objects
Clipping
Lights
Materials
View
Settings... Field Cage (2)
Settings... Faces (3)
Settings... ExtractIsosurface (1)
Settings... Nodes (4)
Settings... Edges (4)
Settings... Transparent Faces (4)


ViewScene 1 Window 1
File Views Help
NewWindow
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Render
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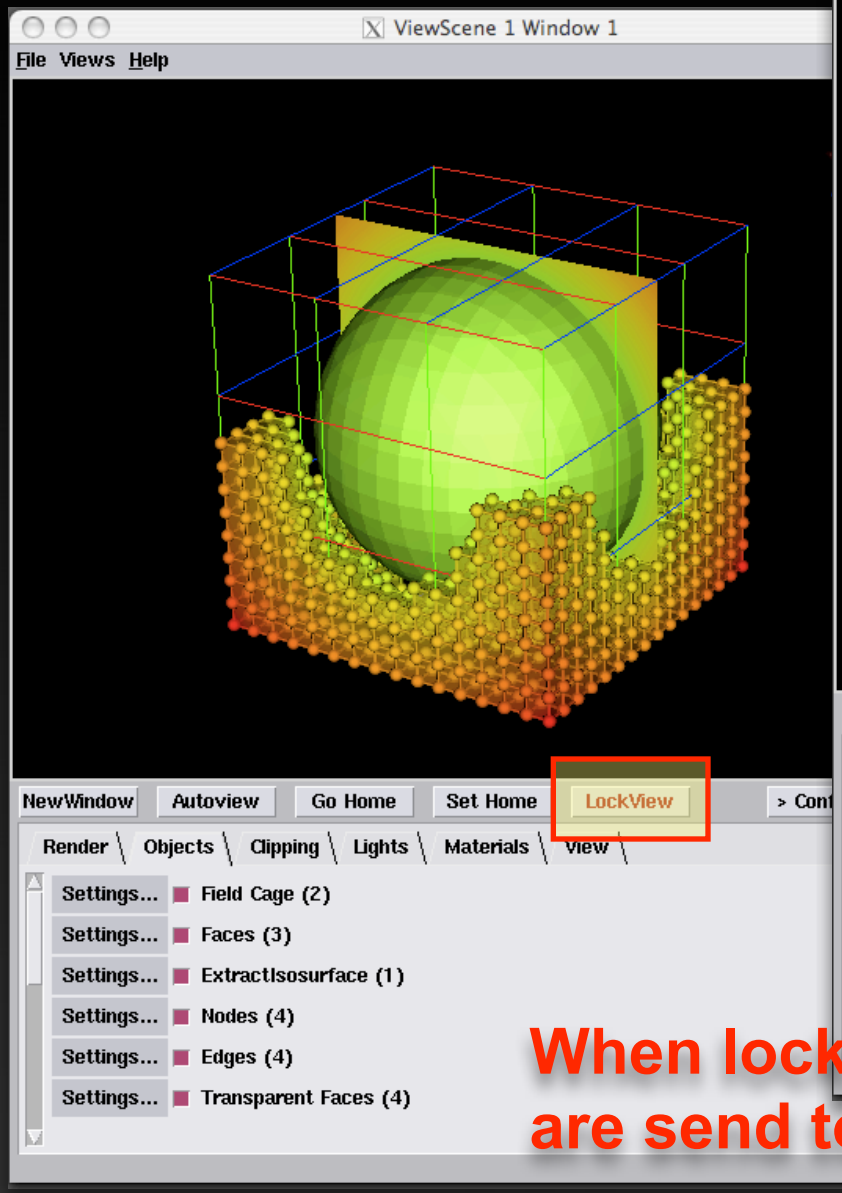
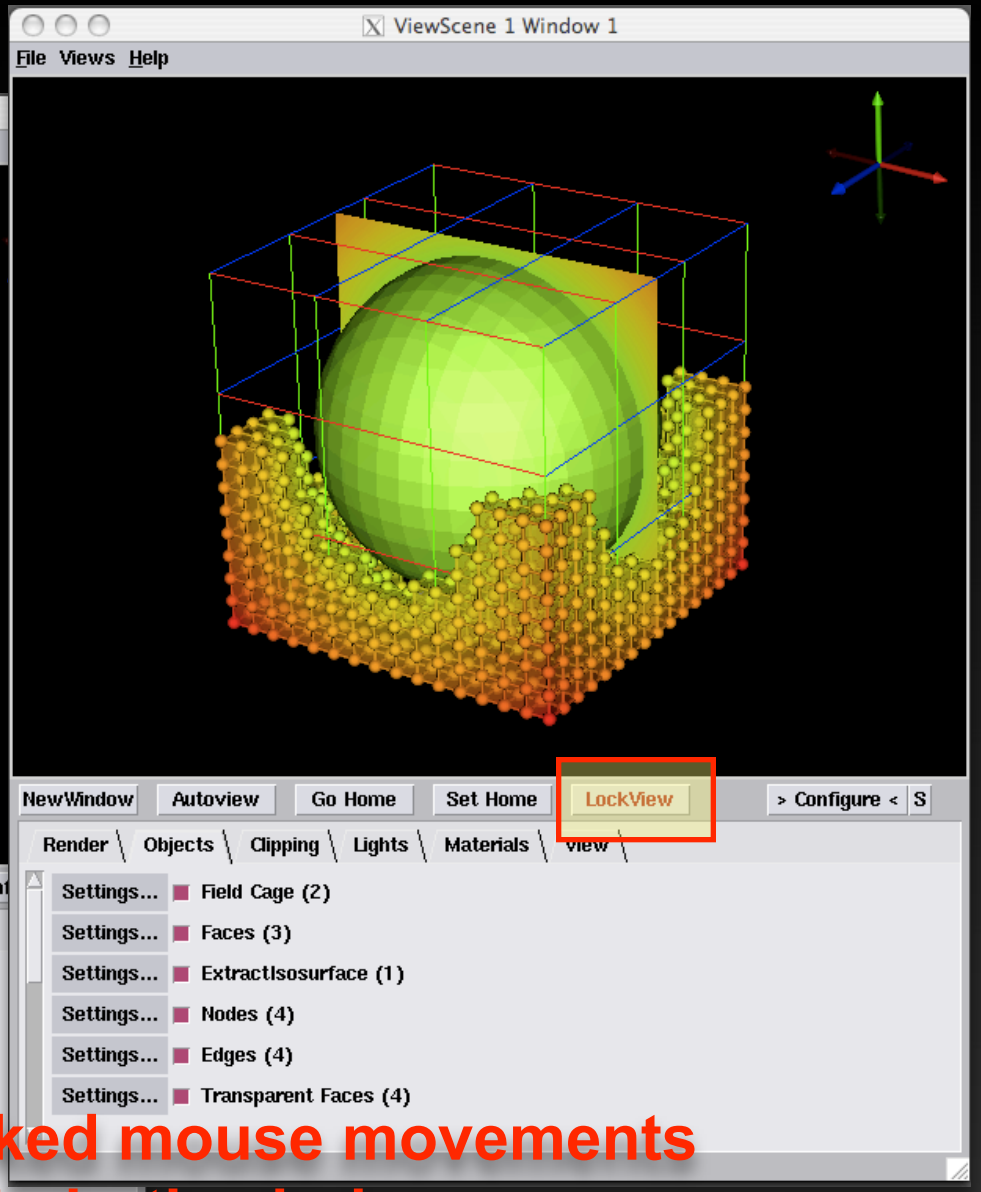
View
Settings... Field Cage (2)
Settings... Faces (3)
Settings... ExtractIsosurface (1)
Settings... Nodes (4)
Settings... Edges (4)
Settings... Transparent Faces (4)

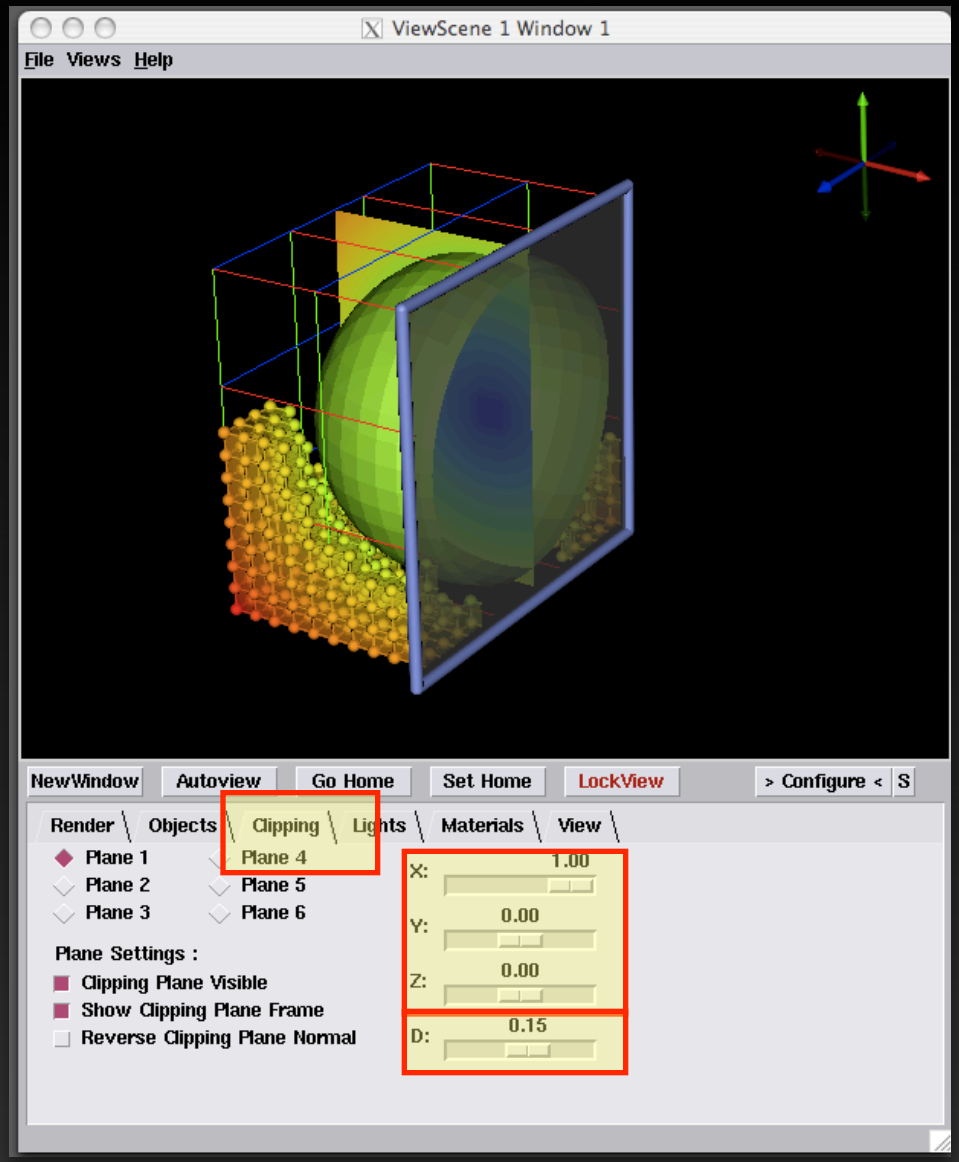
ViewScene





When locked mouse movements are send to both windows

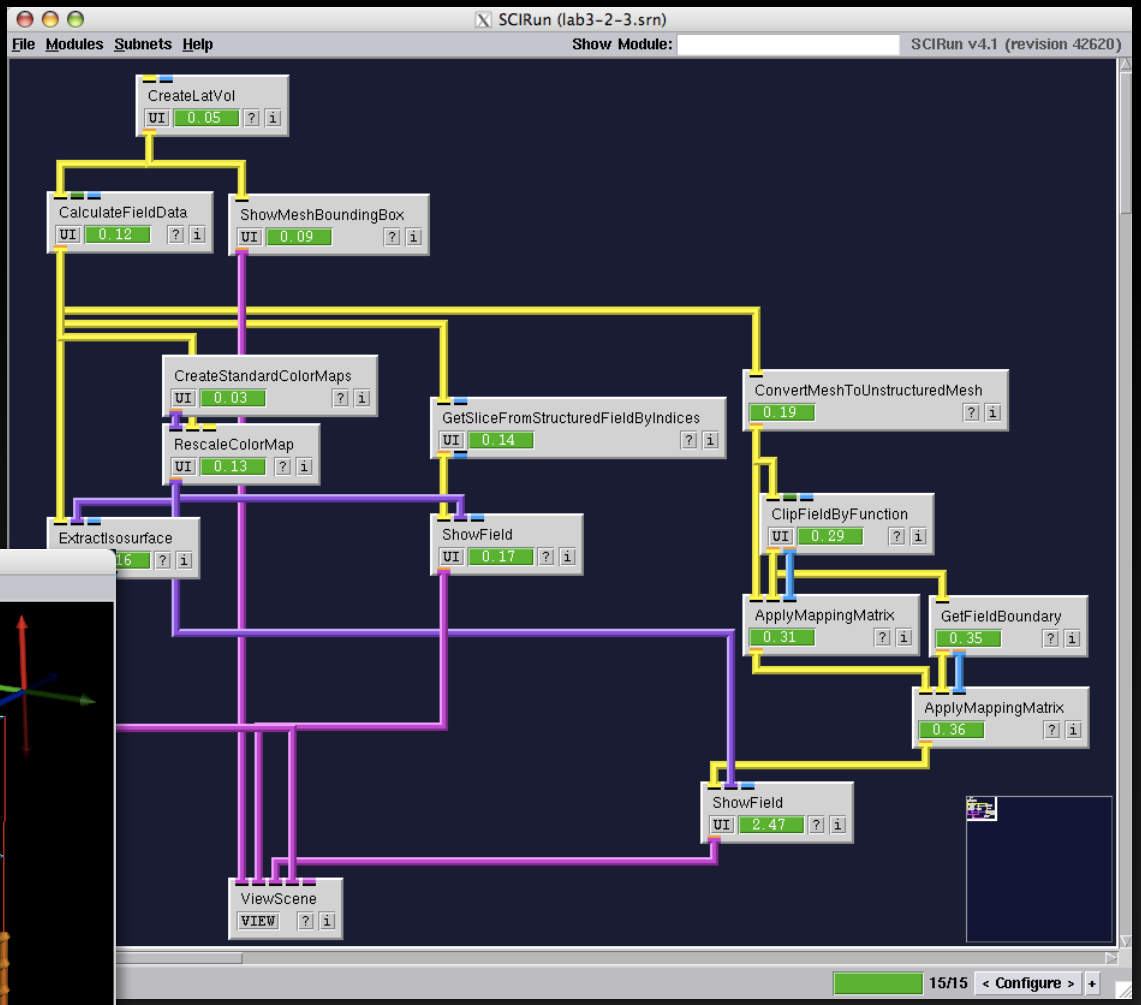
ViewScene Clipping

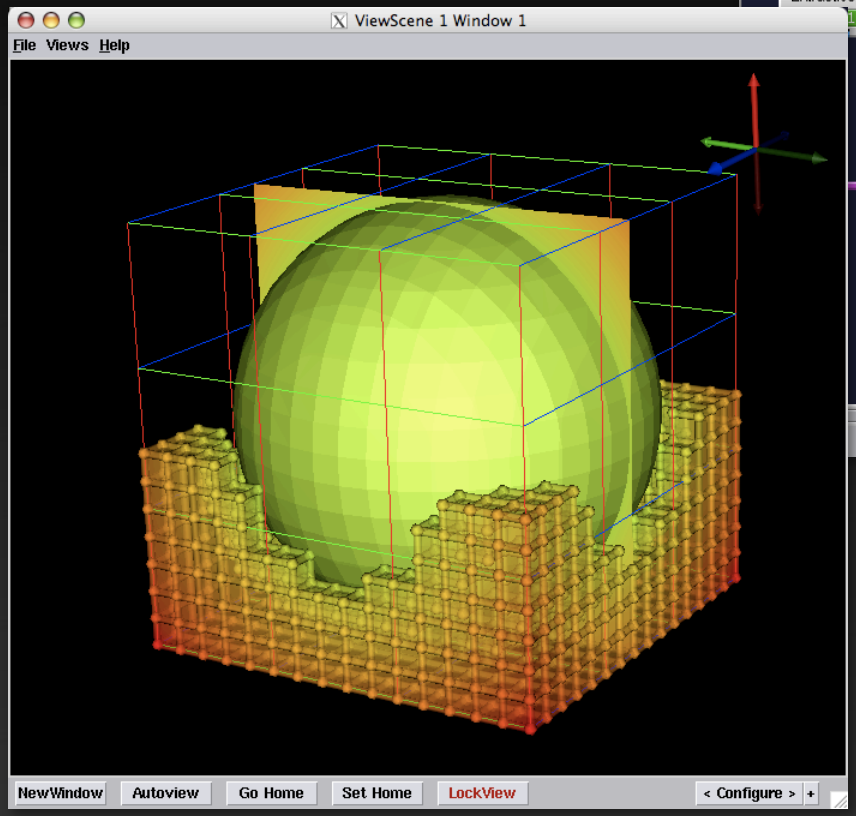


Orientation of normal for clipping plane

Distance of plane origin in normalized coordinates

Lab 3B


SCIRun (lab3-2-3.srn)
File Modules Subnets Help
Show Module:
SCIRun v4.1 (revision 42620)
CreateLatVol
CalculateFieldData
ShowMeshBoundingBox
CreateStandardColorMaps
RescaleColorMap
GetSliceFromStructuredFieldByIndices
ConvertMeshToUnstructuredMesh
ClipFieldByFunction
ExtractIsosurface
ShowField
ApplyMappingMatrix
GetFieldBoundary
ApplyMappingMatrix
ShowField
ViewScene
15/15
< Configure >


ViewScene 1 Window 1
File Views Help
NewWindow
Autoview
Go Home
Set Home
LockView
< Configure >