OptiFDTD

OptiFDTD 12.2.2

Finite-Difference Time-Domain Simulation Design

for Microsoft Windows® 7 /8 /10

Optiwave

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Bug fixes

- **[OP-188] - Observation Areas for nonuniform mesh layout calculate incorrect power values if they don't extend to lowest coordinate boundaries**
  The issue **affects Analyzer** calculating power for non-uniform mesh simulations. The power calculations were incorrect for the Observation Areas which boundaries do not extend to the minimum coordinate values of the plane where the Observation Area was placed. For example, an Observation Area placed at some Z distance in XY plane (XY-cut), with rectangle boundary not extending to the (Xmin, Ymin) edges, would result in incorrect power value calculations.
- **[OV-3] - 3D data viewer crashes when data grid is too large**
  The issue affects Viewer 3D when using "data viewer". In the Viewer 3D, open a data file which has over 500 columns, select one of the field components and then open "data viewer". The application freezes due to the "data viewer" grid crash. The crash is related to limitation of the .NET v. 3.5 grid component. The issue has been fixed with grid component from .NET v. 4.5.

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Improvements

- **[OP-122] - Add initial phase in the point source dialog**
  The **Initial phase** field has been added to the Point Source properties dialog. Values in degrees can be entered to describe the initial phase of the input field. Multiple input sources can have different phase values and model interference effects for example. A new scripting function named **SetInitialPhase** has been added to the Point Source object properties. See the Visual Basic Reference manual for more details.
- **[OP-134] - Export mesh coordinates**
  The F3D file format used by Optiwave products doesn't include information about non-uniform meshes used in the simulation. This feature enables the export of the mesh information in OptiFDTD Analyzer. To export the mesh, from OptiFDTD Analyzer, go to **Tools->Detector Analysis**, then select the observation area or line you want to export. Click on the **Export Data...** button. If you expand the observation area or line (using the plus sign), you will be able to export the DFT values of the fields and / or the meshes associated by checking the box next to **DFT** and **Mesh**. The mesh points coordinates are exported in a single column in a separated file for each dimension.

Bug fixes

- **[OP-124] - Matrix converter outputs transposed matrices**
  The **Matrix Converter** tool (in **OptiTools** toolbox) was outputting matrices in the wrong direction. Using the matrices in Matlab or Excel for example would involve transposing the values. This bug is now fixed and the results are now in the good orientation.
- **[OP-126] - Observation line graph not updated when DFT wavelength is changed**
  In OptiFDTD 12.2 we simplified the observation line detector analysis window by removing the **Update graph button**. A bug was introduced and updates for the observation lines were not done when the user changed the wavelength in the DFT values list. This bug fix corrects the problem.
- **[OP-127] - Mesh converter labels** wrong
  The **Mesh Converter** (In **OptiTools** toolbox) convertion fields values were not labelled properly. This issue is now fixed.
- **[OP-128] - "test script" function crashing OptiFDTD**
  In some cases, clicking the **test script** button or clicking **Simulation->Test script** would crash OptiFDTD Designer. Stability of the OptiFDTD Designer application has been greatly improved and this type of issue should disappear with this new release.
- **[OP-132] - Serious flickering problem with RefIdx tabs while scripting**
  While running the script (using the **Test Script** function), the refractive index display would show update problems (such as flickering). This issue is now fixed.
- **[OP-133] - Clipping length defaults to -0, triggering an error**
  Some objects (such as E**lliptic lens** and **Circular lens**) contain a property named **Clipping Length**. Due to some issues in the values validation, entering "0" in the field would result in an error. This bug is now fixed.