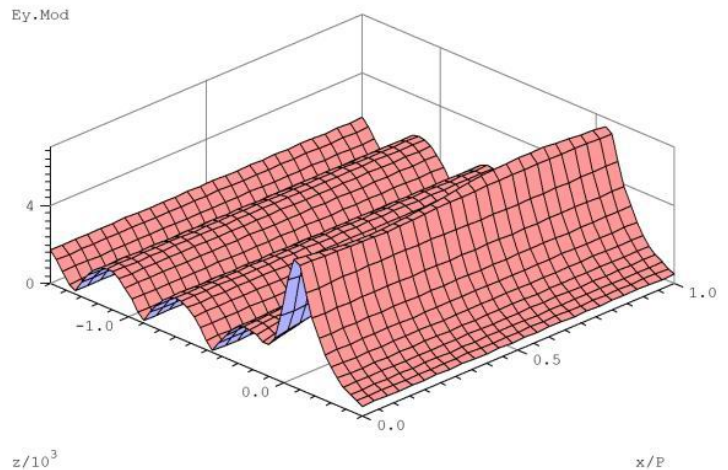


Chandezon collinear

1. The classic method example of a single resonance excitation in a corrugated waveguide by a plane wave having the TE polarization under 45 degrees incidence.

Settings are arranged for the Electric field modulus scanning inside the structure and in ambient media.

Open the source file *Single_TE_Res_45deg.cha* and press the *Run* button and then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Front*.

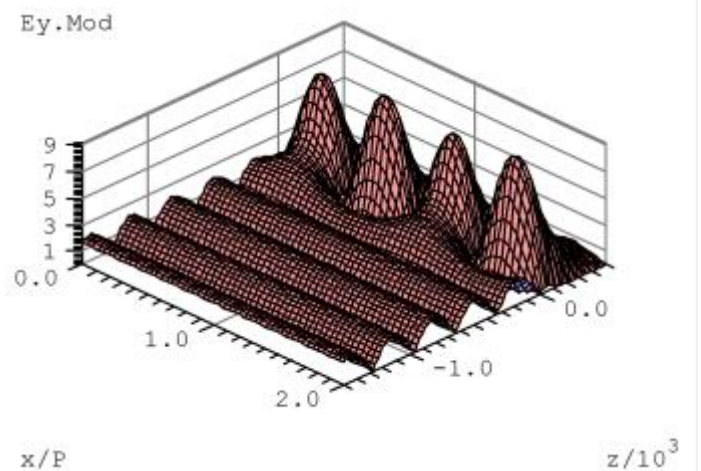


2. The classic method example of a double resonance excitation in a corrugated waveguide by a plane wave having the TE polarization under normal incidence.

Settings are arranged for:

a) The electric field modulus scanning inside the structure and in ambient media.

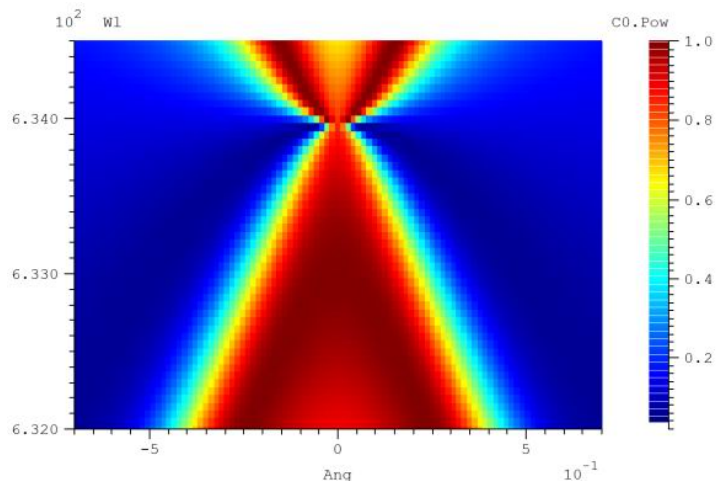
Open the source file *Doub_TE_Res_Refl_Field.cha* and press the *Run* button and then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Front*.



b) Reflection scanning versus angle and wavelength both close to the resonance values.

Go to *Settings* -> *Options* deselect *Field Calculation*.

Press the *Run* button and wait for result and then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Color Scale* and *Top Color Image*.

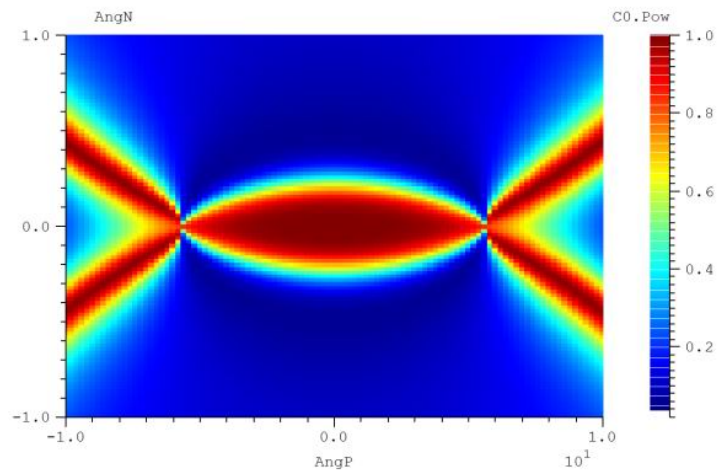


3. The extended method example of a double resonance excitation in a corrugated waveguide by a plane wave having the TE polarization under normal incidence. The example also demonstrates the *Grating based* coordinate system use.

Settings are arranged for reflection scanning versus two angles close to the normal.

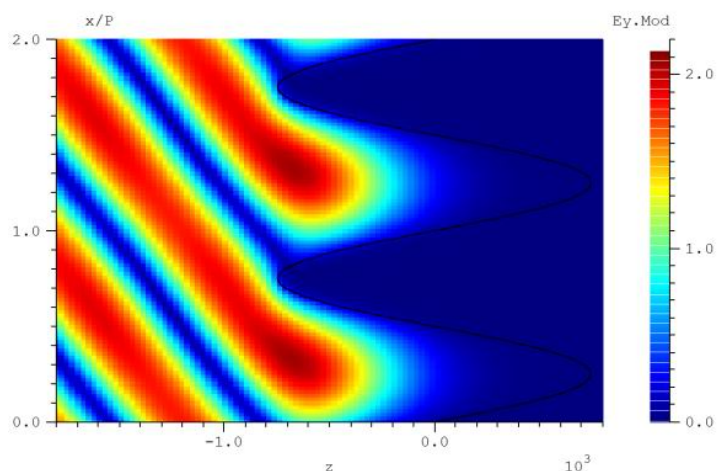
The incidence wave E field projection on a structure plane remains parallel to the grating grooves.

Open the source file *Doub_TE_Res_AngN_AngP.cha* and press the *Run* button and wait for result then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Color Scale* and *Top Color Image*.



4. The classic method example demonstrates high efficient metal sinusoidal grating in Littrow condition for the TE polarization. A substrate refractive index is close to the Aluminum real value refractive index at the 1000 nm wavelength.

Open the source file *Littrow.cha* and press the *Run* button for evaluating diffraction efficiencies. Press the *Run* button again and then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Color Scale* and *Top Color Image*.



Chandezon conical

1. The classic method example of a double resonance excitation in a corrugated waveguide by a plane wave having the TM polarization under normal incidence.

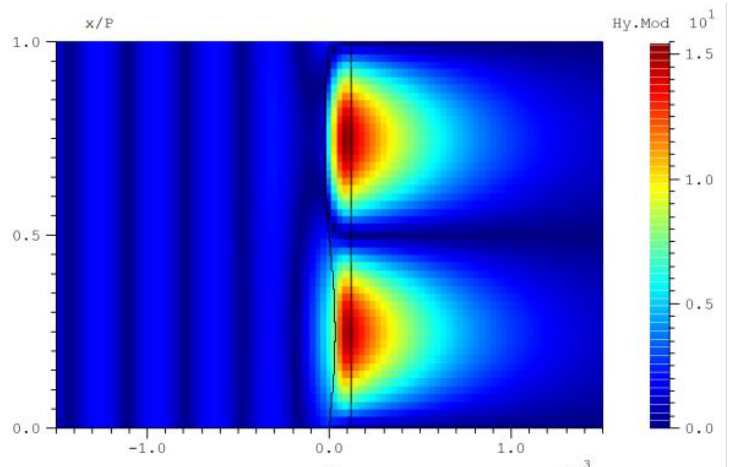
Settings are arranged for:

a) Electric field modulus scanning inside the structure and in ambient media.

Open the source file

Doub_TM_Res_Refl_Field.cha

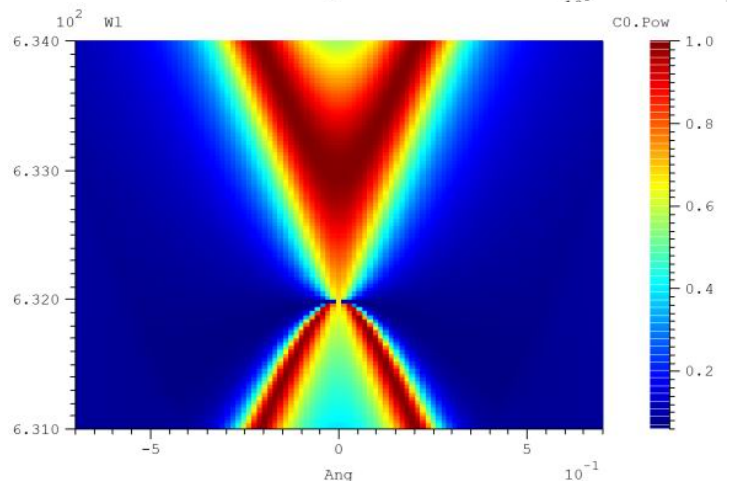
and press the *Run* button and then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Color Scale* and *Top Color Image*.



b) Reflection scanning versus angle and wavelength both close to the resonance values;

Go to *Settings* -> *Options* deselect *Field Calculation*.

Press the *Run* button and wait for result then press the *Graph* button.



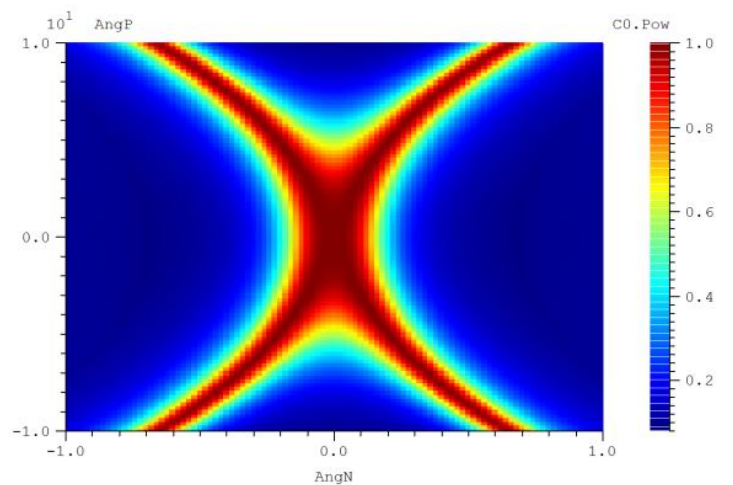
2. The extended method example of a double resonance excitation in a corrugated waveguide by a plane wave having the TM polarization under normal incidence.

Settings are arranged for the Reflection scanning versus two angles close to the normal. Incidence wave H field projection on structure plane remains parallel to the grating grooves.

Open the source file

Doub_TM_Res_Refl.cha

and press the *Run* button and wait for result, then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Color Scale* and *Top Color Image*.



Modal collinear

1. The example demonstrates the grating having zero transmission in zero order for the TE polarization.

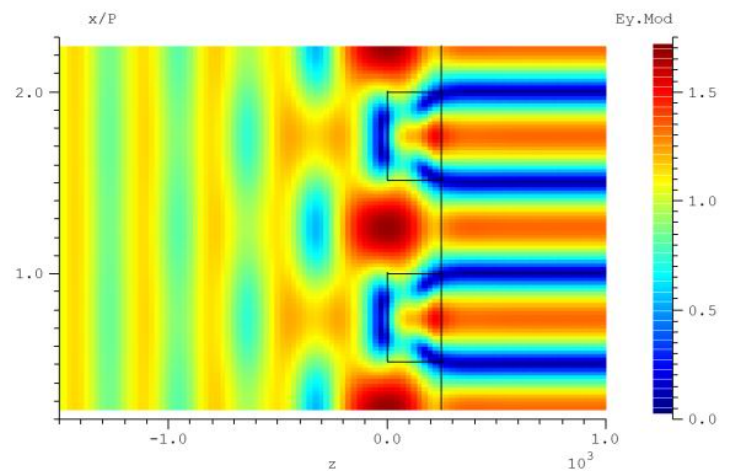
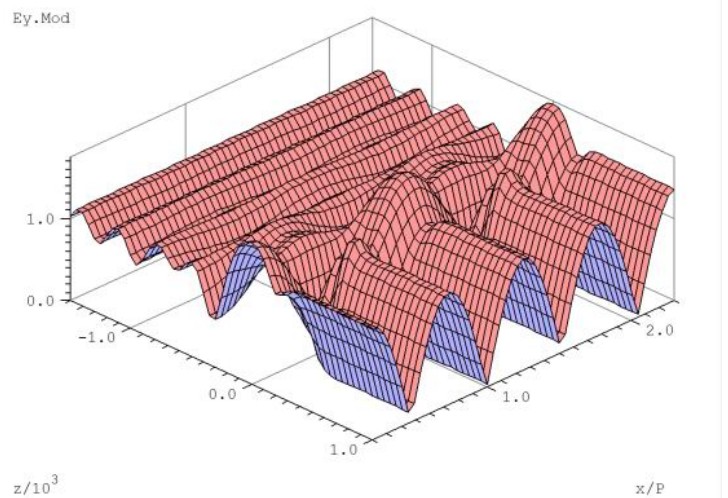
Open the source file ***ZeroTransm_0-order.mdl***. There are several successive options:

a) Press the *Run* button to evaluate diffraction efficiencies;

b) Press the *Run* button again and then press the *Graph* button for the field distribution. If necessary, in the Graph window go to *View* to select *Front*.

c) In the Graph window go to *View* select *Color Scale* and click *Top Color Image*.

d) Press the *Optimize* button to evaluate optimization functionality.



2. The example of a multilayer mirror design using an optimization.

Open the source file ***MLMirror.mdl***. There are several options:

a) Press the *Run* button and then press the *Graph* button to see a Mirror wavelength reflection graph.

b) Press the *Optimize* button to evaluate the optimization functionality.

3. The example of modes filtering effect for high refractive index contrast ideal metal grating is taken from the paper N. Lyndin, O. Parriaux and A.V. Tishchenko, "Modal analysis and suppression of the FMM instabilities in highly conductive gratings", J. Opt. Soc. Am. A, Vol. 24, pp. 3781-3788 (2007).

Settings are arranged for the field calculation and for the diffraction efficiency scan versus groove width.

Open the source file **RCWA.mdl**.

There are several successive options:

- a) For the FMM field calculation with modes filtering press the *Run* button. When the calculation is finished press the *Graph* button;
- b) For the FMM field calculation without modes filtering go to *Setting -> Options*. Uncheck *Neff Filter Level* Box. Press the *Run* button. When the calculation is finished press the *Graph* button;
- c) For the FMM diffraction efficiency scan without modes filtering go to *Setting -> Options*. Uncheck *Field Calculation* Box. Press the *Run* button. When the calculation is finished press the *Graph* button and select red color;
- d) For the FMM diffraction efficiency scan with modes filtering go to *Setting -> Options*. Check *Neff Filter Level* Box. Press the *Run* button. When the calculation is finished press the *Graph* button and select blue color;
- e) For the TMM diffraction efficiency scan go to *Setting -> General*. Select *True Modes Method*. Press the *Run* button. When the calculation is finished press the *Graph* button and select black color.
- f) For the TMM field calculation go to *Setting -> Options*. Check *Field Calculation* Box. Press the *Run* button. When the calculation is finished close the information window end press the *Graph* button.

4. The example of a grating profile generation from a data file.

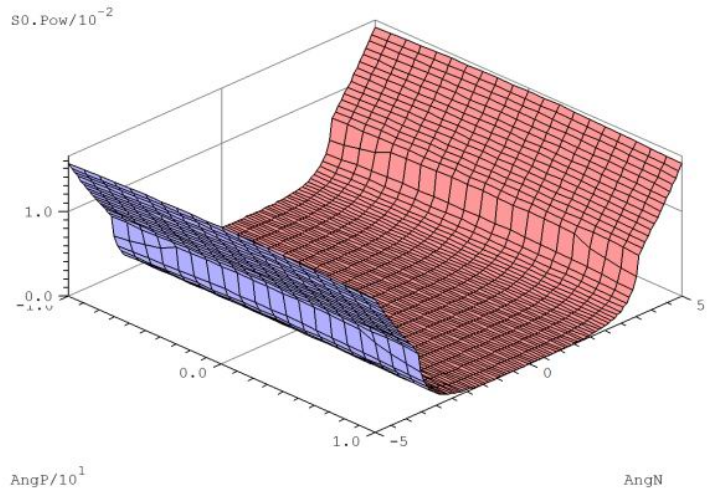
Open any sample from the *File -> Samples* menu. Go to *Settings -> Layers* and press the *Convert* button to open *Layer Conversion* window. For example type 100 in the field *Number of Sub Layers*. In *Conversion Type* combo box select the *Profile From File* item and select *ProfileCylinder* or *ProfileJoke* data file and press *OK* button. Close the *Settings* window and go to the *Service Window -> Grating Profile* menu to evaluate the grating profile.

Modal conical

1. The example demonstrates the grating having zero transmission in zero order under normal incidence. The example also demonstrates the *Grating based* coordinate system use.

Settings are arranged for evaluating the zero order transmission versus two angles around normal preserving the vector E projection on the structure plane parallel to the grating grooves.

Open the source file ***ZeroTransm_AngN_AngP.mdl*** and press the *Run* button and wait for result, then press the *Graph* button. If necessary, in the Graph window go to *View* to select *Front*.



2. The example demonstrates the Slider functionality.

Open the source file ***Slider.mdl***. Press the *Run* button. In a few seconds the angular reflection from a corrugated waveguide will be calculated. Press the *Slider* menu item and evaluate the reflection behavior versus incident wave polarization state and the output polarizer orientation.