

ASSIGNING BOUNDARY CONDITIONS IN SVSLOPE 2D

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Introduction

Hi, my name is Murray Fredlund. Welcome to the session How to Assign Boundary Conditions in SVSlope 2D within the *SVOffice 2009 Next Generation* geotechnical software suite.

Details about Slope Analysis

Boundary conditions in SVSlope are different than a typical finite element numerical model. SVSlope uses Limited Equilibrium Principles rather than the Finite Element Method to obtain a solution. Therefore, the equivalent of boundary conditions in SVSlope is the application of Loading Conditions which are applied externally to the model. You can see under the **Model>Loading** menu that the options are **Line Load, Distributed Load** and **Seismic Loads**. Selecting any one of these loads will bring up a dialog which shows all of the different options which can be selected for a particular line load. Selecting a new line load can be accomplished by selecting **New** in the **Line Load** dialog. The properties of the Line Load can be entered manually through the dialog, as well as the acting points. The big problem is, how do you find, on a sloped surface, where the exact acting point is. All the user has to do is click the Draw button and hovering the mouse over the object. The software can then determine the exact acting point. To select the point click the mouse, the load is applied and the actual point at which that load acts on the model is calculated and displayed in the **Acting Points** section of the **Line Load** dialog. Once that load is entered, there are a lot of details that can be selected (example, the load can be placed normal to the boundary, vertical, horizontal or at any particular angle from the horizontal or boundary). The formatting of how the Line Load is displayed can also be modified.

Applying a Distributed Load

If we want to apply a Distributed Load (**Model>Loading>Distributed Load**) the options are similar. A dialog appears showing the properties that can be entered. Select **New**, determine the **Magnitude**. If you don't know where the load is being applied, you can select **Draw**. By clicking once on the first point, on the model, and dragging the mouse until the desired distributed load is displayed across the boundary that you are selecting, you can then click the mouse again to apply the load. Again, loading conditions can be applied vertically, horizontally and at any particular angle.

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