eSim interface to OpenModelica

Spoken Tutorial Project
https://spoken-tutorial.org
National Mission on Education through ICT
https://sakshat.ac.in

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In this tutorial, we will learn to

Learning Objectives

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▶ **Add a netlist file in Modelica Converter in eSim**

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In this tutorial, we will learn to

- ▶ **Add a netlist file in Modelica Converter in eSim**
- ▶ **Convert Ngspice netlist to Modelica model in eSim**

Learning Objectives

In this tutorial, we will learn to

- ▶ Add a netlist file in Modelica Converter in eSim

- ▶ Convert Ngspice netlist to Modelica model in eSim

- ▶ Load OMEdit from eSim

System Requirements

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- ▶ **Ubuntu OS v20.04**
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The process demonstrated in this tutorial is similar in Windows OS also

Pre-requisites

- **The learner should have basic knowledge of eSim and OpenModelica**

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▶ For pre-requisite eSim and OpenModelica tutorials, please visit

https://spoken-tutorial.org

Code Files

► **The files used in this tutorial are provided in the Code files link**

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- ▶ **Make a copy and then use them while practicing**

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- ▶ **Interfacing these two, helps us to get eigenvalues**

OpenModelica with eSim

- **OpenModelica is a modeling software and eSim is an EDA tool**
- **Interfacing these two, helps us to get eigenvalues**
- **It also helps us to determine the stability of the system**

About Modelica Converter

► **The Modelica Converter feature of eSim converts a netlist file to a model file**

About Modelica Converter

- **The Modelica Converter feature of eSim converts a netlist file to a model file**
- **OpenModelica OMEdit can be launched from eSim to edit and simulate the model file**

About Modelica Converter

► **For more details on OpenModelica, please visit: https://www.openmodelica.org/**

Summary

In this tutorial, we have

- ▶ **Added a netlist file in Modelica Converter in eSim**

- ▶ **Converted the Ngspice netlist to Modelica model**

- ▶ **Loaded OMEdit from eSim**

Assignment

▶ Load the **BJT_Biascircuit** project in eSim

▶ **BJT_Biascircuit** project is available in the code file link

▶ Click on the **BJT_Biascircuit** on the right panel

Assignment

- ▶ Click on the **Modelica Converter**
- ▶ Check the path of the netlist file
- ▶ Click on the **Convert** option
- ▶ Click on the **Browse OM** option

Assignment

- ► **Browse to the path of the OpenModelica executable**
- ► **Check the path loaded in the textbox**
- ► **Click on the Load OMEdit option**
- ► **Simulate the model from the OMEdit Interface**

About the Spoken Tutorial Project

▶ **Watch the video available at**
   https://spoken-tutorial.org
   /What_is_a_Spoken_Tutorial

▶ **It summarizes the Spoken Tutorial project**

▶ **If you do not have good bandwidth, you can download and watch it**

Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ **Conducts workshops using spoken tutorials**

- ▶ **Gives certificates to those who pass an online test**

- ▶ **For more details, please write to contact@spoken-tutorial.org**

Answers to THIS spoken tutorial

- ▶ **Questions in THIS Spoken Tutorial**
- ▶ **Visit** **https://forums.spoken-tutorial.org**
- ▶ **Choose the minute and second where you have the question**
- ▶ **Explain your question briefly**
- ▶ **The Spoken Tutorial project will ensure an answer**
- ▶ **You will have to register to ask questions**

FOSSEE Forum

▶ **For any general or technical questions on eSim, visit the FOSSEE forum and post your question**
https://forums.fossee.in/

Circuit Simulation Project

- **The FOSSEE team coordinates the Circuit Simulation project**
- **For more details visit: https://esim.fossee.in/circuit-simulation-project**

TextBook Companion Project

- ▶ **The FOSSEE team coordinates the TextBook Companion project**
- ▶ **For more details visit: https://esim.fossee.in/textbook-companion-project**

Lab Migration

▶ **The FOSSEE team coordinates the Lab migration project**

▶ **For more details visit: https://esim.fossee.in/lab-migration-project**

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Thank you

This is Harisankar, a FOSSEE Summer fellow 2022, IIT Bombay signing off