

Demonstration of a model

Spoken Tutorial Project
<https://spoken-tutorial.org>

National Mission on Education through ICT
<http://sakshat.ac.in>

Samboju Sai Kiran
FOSSEE, IIT Bombay

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Learning Objectives

In this tutorial, we will learn:

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In this tutorial, we will learn:

- ▶ **About SMIB**



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- ▶ **Set up the initial values and power flow data**

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- ▶ **Interpreting the results obtained**

System Requirements



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► OpenModelica version 1.12.0

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- ▶ **Ubuntu Linux OS 16.04**

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- ▶ **Ubuntu Linux OS 16.04**
- ▶ **Windows, Mac OS X or FOSSEE OS on ARM**

Prerequisites

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- ▶ **Power systems**

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- ▶ **Power systems**
- ▶ **Modeling using OpenModelica**

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- ▶ Power systems
- ▶ Modeling using OpenModelica

Prerequisite tutorials are available on
<https://spoken-tutorial.org>

Single Machine Infinite Bus (SMIB)

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Single Machine Infinite Bus (SMIB)

What is SMIB?

- ▶ **SMIB stands for “Single Machine Infinite Bus”**
- ▶ **In this network there is only a single machine and an infinite bus**
- ▶ **The synchronous machine is connected to the Infinite bus using power lines**

Demonstration of SMIB model



Demonstration of SMIB model

- ▶ **Download the files given in Code Files link of this tutorial**

Demonstration of SMIB model

- ▶ Download the files given in Code Files link of this tutorial
- ▶ Extract them into a separate folder

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- ▶ Let us open SMIB model in OpenModelica

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Assignment



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- ▶ We recommend that you open different examples under the library
- ▶ Then simulate and explore the results.

Summary

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Power System Simulation Project

The FOSSEE team

- ▶ Invites contributions to develop power system networks using OpenIPSL library
- ▶ Gives honararium and certificates to those who do this
- ▶ For more details, please visit this site
<https://om.fossee.in/powersystems>

About the Spoken Tutorial Project

- ▶ Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project

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- ▶ 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

Forum to answer questions

- ▶ Do you have questions in **THIS Spoken Tutorial?**
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ Someone from the **FOSSEE** team will answer them

Please visit <https://forums.spoken-tutorial.org/>



Forum to answer questions

- ▶ Questions not related to Spoken Tutorial?
- ▶ Do you have general / technical questions on the software?
- ▶ Please visit the FOSSEE Forum
<https://forums.fossee.in/>
- ▶ Choose the software and post your question

Textbook Companion Project

- ▶ **The FOSSEE team coordinates coding of solved examples of popular books**
- ▶ **We give honorarium and certificate to those who do this**

For more details, please visit this site:

<https://OM.fossee.in/Textbook-Companion-Project>

Lab Migration Project

- ▶ **The FOSSEE team helps migrate commercial simulator labs to OpenModelica**
- ▶ **We give honorarium and certificates to those who do this**

For more details, please visit this site:

<https://OM.fossee.in/lab-migration-project>



Acknowledgements

- ▶ **Spoken Tutorial Project is a part of the Talk to a Teacher project**
- ▶ **It is supported by the National Mission on Education through ICT, MHRD, Government of India**
- ▶ **More information on this Mission is available at <https://spoken-tutorial.org/NMEICT-Intro>**

Thanks!

<https://openmodelica.org>