

Simulation of a SMIB using OpenIPSL

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

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

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Learning Objectives

In this tutorial, we will learn:



Learning Objectives

In this tutorial, we will learn:

- ▶ **How to simulate a controlled SMIB system**



Learning Objectives

In this tutorial, we will learn:

- ▶ **How to simulate a controlled SMIB system**
- ▶ **Plotting voltage profiles of buses**



Learning Objectives

In this tutorial, we will learn:

- ▶ **How to simulate a controlled SMIB system**
- ▶ **Plotting voltage profiles of buses**
- ▶ **Plotting delta curve of the generator**



System Requirements



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- ▶ **OpenModelica version 1.12.0**

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



Prerequisites

To follow this tutorial, you should have knowledge of :



Prerequisites

To follow this tutorial, you should have knowledge of :

- ▶ Power systems



Prerequisites

To follow this tutorial, you should have knowledge of :

- ▶ Power systems
- ▶ Modeling using OpenModelica



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

Prerequisites

In earlier tutorials we have already seen



Prerequisites

In earlier tutorials we have already seen

- ▶ **How to connect a controlled SMIB system**



Summary

Lets summarize:

- ▶ **How to simulate a controlled SMIB system**
- ▶ **Plotting voltage profiles of buses**
- ▶ **Plotting delta curve of the generator**



Assignment

- ▶ We recommend that you open the SMIB system which was modelled in earlier tutorial.
- ▶ Enter the required data and simulate it.
- ▶ Explore the results obtained.



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
- ▶ 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>



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- ▶ **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>**

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Thanks!

<https://openmodelica.org>

