

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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20 January 2019



Learning Objectives

In this tutorial, we will learn:

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In this tutorial, we will learn:

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

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

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

System Requirements

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

Prerequisites

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- ▶ **Power systems**

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- ▶ **Modeling using OpenModelica**

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

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- ▶ **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>



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>**

Acknowledgements

- ▶ **We acknowledge the contributions made by Prof. Luigi Vanfretti and Biswarup for the models used in this series.**

Thanks!

<https://openmodelica.org>