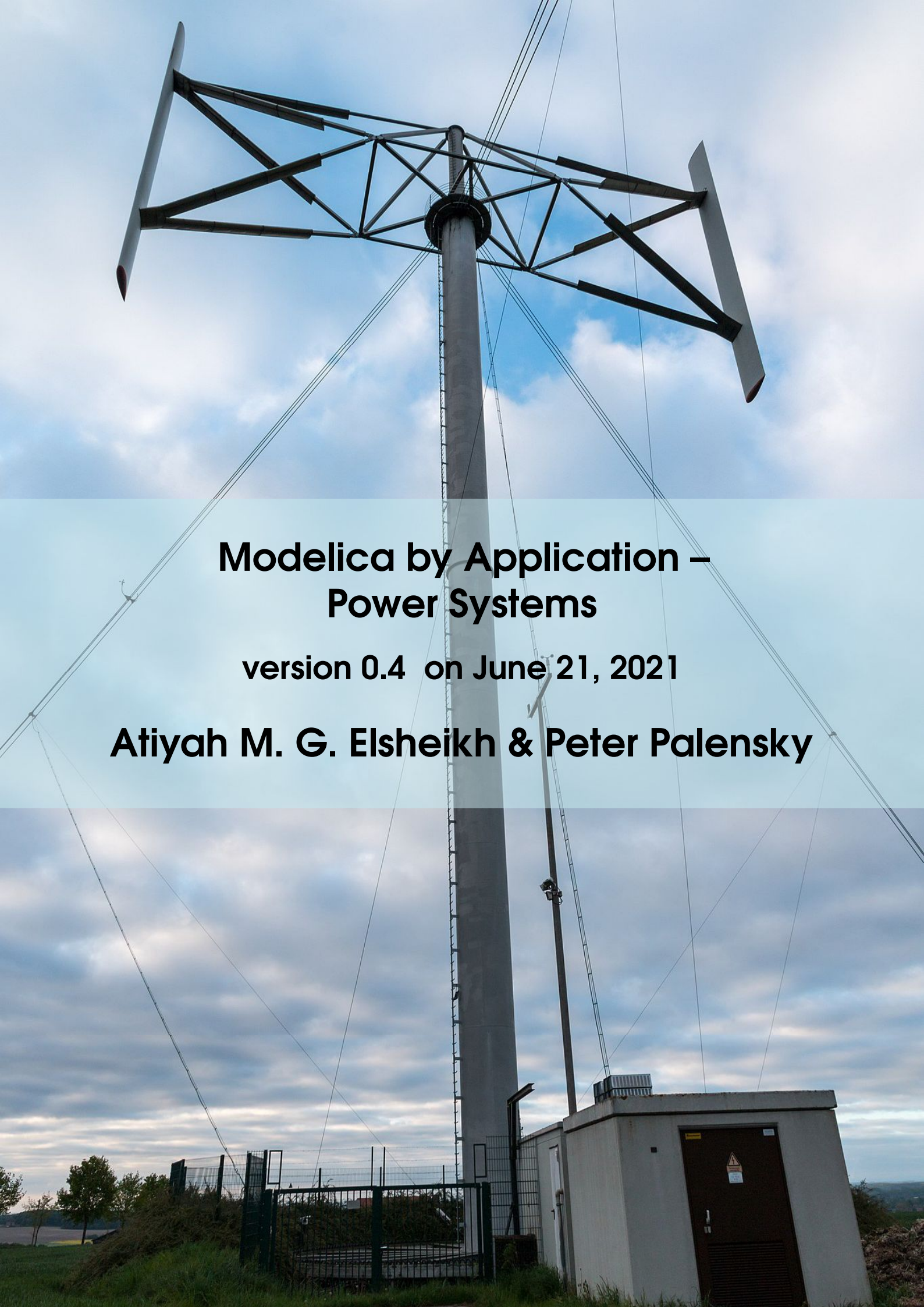

Modelica by Application – Power Systems

version 0.4 on June 21, 2021

Atiyah M. G. Elsheikh & Peter Palensky

Book Website:

https://github.com/Mathemodica/ModelicaPowerSystemBook

Dedication from the first author to

Meram ميرام

About

This is a comprehensive but a concise and educational (e-)book aiming at advertising Modelica-based technologies particularly useful for power system modeling applications. Whatever aspect that could be useful has been included, to the best of author's knowledge. We hope that this book is useful not only for power system modelers desiring to get a quick idea about the benefits of employing Modelica but also for those Modelica modelers desiring a starting guide into the world of Power System.

Involvement & Conditions

If you are clearly involved in power-system related activities using the Modelica language, you are highly encouraged to actively improve the state of this book whenever and/or wherever possible. For this reason, this book is available on the platform Overleaf which allows collaborative writing.

However, it is important to note that, any suggested enhancement should be valuable, concise, accurate and elegant. The authors have the right to reject or to ask for specific corrections or improvements to any suggested enhancement.

Contact

Consider contacting atiyah.elsheikh@mathemodica.com if you would like to:

- contribute to the text: Consider providing a brief summary in advance of the purpose of your desired involvement
- provide suggestions or pdf-annotated review, suggested corrections, suggested text, etc.
- provide a general feedback
- provide suggested topics or materials that this book should cover
- have access to the latex sources for whatever purpose you need, e.g. project proposals, user guides, etc.

Recognition

Your useful scientific involvement, in whichever form, shall be acknowledged, unless explicitly communicated that this is not desired.

First Edition (V1.0) to appear 1st of Sep. 2021

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Acknowledgment

Atiyah Elsheikh is acknowledging his former employer, Austrian Institute of Technology. This book, initially as a technical report, has been started during his role there. The early version was still in a primitive state until he recently decided to write a comprehensive book.

Moreover, couple of capitals of this book has been written by others. Without their contribution, the book would be definitely less valuable. Thus, We'd like to thank (in alphabetical order of family names):

- Prof. Andrea Benigni, RWTH Aachen and Research Center Jülich, with his great help, this book was further tuned for Electrical Engineers. Particularly, major parts of Chapter 2 and Section 11.1 were originally written by him.
- Assoc. Prof. Omar Faruque, Florida State University, for presenting this initiative at a PES general meeting
- Prof. Antonello Monti, RWTH Aachen, being the initiator of the idea of having a comprehensive report that gathers all useful aspects Modelica can provide for power system modeling applications. The first chapter was originally written by him.

We believe that online Modelica educational materials need to be gathered together and since the idea of having a freely accessible book that is meanwhile sponsored (or to be sponsored) by any one on the basis of pay-as-much-as-you-think-this-book-deserve is inspired by the author of the book "Modelica by Examples", thus, my special appreciation goes to Dr. Michael Tiller, for:

- his initial agreement in hosting or linking a future html-version of this book to the platform
  `https://modelica.university`
- his technical tips, recommendations and his willing to help us (despite apparently being a very busy person with his own duties)

We hope to have enough energy in near future to learn the technology needed to bring this book to the platform modelica.university and to establish url-links to adequate materials in his book whenever more in-depth clarification of Modelica syntax is needed. In that way, the focus of this book can remain on the applications side of power systems rather than attempting to illustrate the tiniest details of the Modelica language[1] We also would like to thank

- Dr. Mathias Legrand for allowing to employ this wonderful latex template accessible under

[1] By the release version 0.4, I still did not invest enough time in this issue. If anyone with proper technical knowledge would like to get engaged shall contact us

https://www.latextemplates.com/template/the-legrand-orange-book

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