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Student-Oriented Text Teaches Methods For Finding Transfer Functions

From Stairway Press, *The Fast Track to Determining Transfer Functions of Linear Circuits* by prolific author Christophe Basso is a condensed student guide that teaches about first-, second- and third-order linear transfer functions commonly encountered in the design of electronic systems. In this book, Basso continues to explain how to apply Fast Analytical Circuits Techniques (FACTs), which reduce mathematical overhead and often eliminate the use of complex equations for circuit analysis.

With FACTs, if a circuit is too complicated, it is split into simpler subcircuits that can be evaluated individually. The intermediate results are then assembled to form a desired final result. FACTs work on RLC networks, but also on active circuits featuring operational amplifiers (op-amps) or transistors.

Basso previous' works on this subject include his two most recent books: *Transfer Functions of Switching Converters: Fast Analytical Techniques at Work with Small-Signal Analysis (2021)*, in which he applied the fast analytical circuits techniques for determining the four transfer functions of many switching converters, and *Linear Circuit Transfer Functions: An Introduction to Fast Analytical Techniques (2016)*.

The new book is organized with chapters on the following topics.

- Transfer Functions
- Fast Analytical Circuits Techniques
- Zeroes of a Transfer Function
- Generalized Transfer Functions.
- First-Order Transfer Functions
- Second-Order Transfer Functions
- Third-Order Transfer Functions
- Appendix: Illustrating the Process of Determining Poles and Zeroes.

The goal of this 282-page book (see the figure) is to be practical and lead the reader to solve problems by applying step-by-step approaches. In many cases, the only required accessories are a sheet of paper and a pen. Chapters one to four are a crash course on the FACTs. The subsequent chapters detail how to determine transfer functions of classical networks from the first to third order. After going through the proposed examples at your own pace, the reader will master the techniques for analyzing RLC networks in the frequency domain.

According to the publisher, the book is an ideal companion for students who want to understand and master linear circuit behavior. BSEE, MSEE and Ph.D students will find many useful descriptions and methods which can be applied to linear circuit design and further study.

Other previous books by Basso include *Switch-Mode Power Supplies, Second Edition: SPICE Simulations and Practical Designs* (2014), *Designing Control Loops for Linear and Switching Power Supplies: A Tutorial Guide* (2012), *Switch-Mode Power Supplies: Spice Simulations and Practical Designs* (2008) and the *Switch-Mode Power Supply SPICE Cookbook* (1996).

Christophe Basso works as a business development manager for Future Electronics in France. In this role, he provides technical assistance to customers developing power switching converters in Europe. Before this position, he was a Technical Fellow with onsemi in Toulouse, France. He led an application team dedicated to developing new offline PWM controllers' specifications. Christophe has originated numerous integrated circuits among which the NCP120X series has set new standards for low standby power converters.

Christophe has over 25 years of power supply industry experience. He holds 25 patents on power conversion and often participates in conferences and contributes to trade magazines including How2Power Today.

The Fast Track to Determining Transfer Functions of Linear Circuits (ISBN 978-1-960405-11-1) is available now from Stairway Press in Apache Junction, Ariz. It is nominally priced at $69.95 for the hard copy edition, but is being introduced at a sale price of $54.95. For more information, see the Stairway Press website.

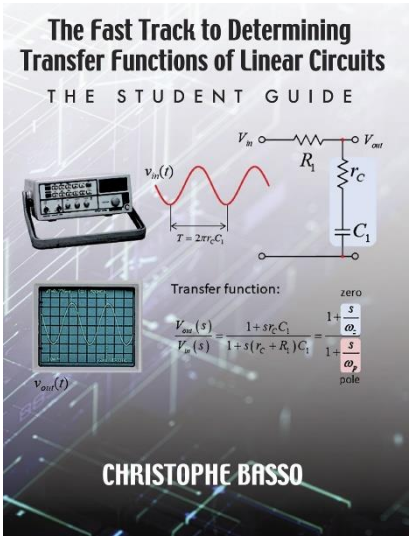

Figure. Described as "an ideal companion for students who want to understand and master linear circuit behavior," Christophe Basso's latest book explains how to apply Fast Analytical Circuits Techniques (FACTs) to determine the first-, second- and third-order linear transfer functions of circuits commonly encountered in the design of electronic systems.