

Author: Theodore T. Allen

Title: Introduction to Discrete Event Simulation and Agent-based Modeling

Publisher: Springer-Verlag

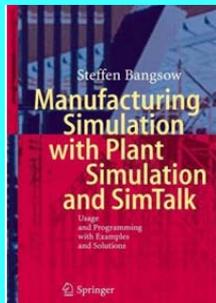
ISBN 978-0-85729-138-7 © 2011

215 pages

*Introduction to Discrete Event Simulation and Agent-based Modeling* demonstrates how simulation can facilitate improvements on the job and in local communities. It allows readers to competently apply technology considered key in many industries and branches of government. It is suitable for undergraduate and graduate students, as well as researchers and other professionals.

The book covers the techniques needed for success in all phases of simulation projects. These include:

- Definition – The reader will learn how to plan a project and communicate using a charter.
- Input analysis – The reader will discover how to determine defensible sample sizes for all needed data collections. They will also learn how to fit distributions to that data.
- Simulation – The reader will understand how simulation controllers work, the Monte Carlo (MC) theory behind them, modern verification and validation, and ways to speed up simulation using variation reduction techniques and other methods.
- Output analysis – The reader will be able to establish simultaneous intervals on key responses and apply selection and ranking, design of experiments (DOE), and black box optimization to develop defensible improvement recommendations.
- Decision support – Methods to inspire creative alternatives are presented, including lean production. Also, over one hundred solved problems are provided and two full case studies, including one on voting machines that received international attention.



Author: Steffen Bangsow

Title: Manufacturing Simulation with Plant Simulation and SimTalk

Publisher: Springer-Verlag

ISBN 978-3-642-05073-2 © 2010

297 pages

This book is a systematical introduction to the development of simulation models and the implementation and evaluation of simulation experiments with Plant Simulation. *Manufacturing Simulation with Plant Simulation and SimTalk* is aimed at all users of Plant Simulation looking for an easy entry into the program. A particular focus is on the introduction into the simulation flow language SimTalk and its use in various areas of the simulation. In over 100 examples the author shows, how the modules for simulation models combined, and how to deal with SimTalk complex control and analysis tasks. The contents of the book ranges from the description of the basic functions of the material flow components to demanding topics such as the realization of a database connection using the ODBC interface or the exchange of data with Microsoft Excel on DDE.

This book provides the first comprehensive introduction to Plant Simulation. It supports new users of the software to get started quickly, provides an excellent introduction how to work with the embedded programming language SimTalk and even helps advanced users with examples of typical modelling tasks. The book focuses on the basic knowledge required to execute simulation projects with Plant Simulation which is an excellent starting point for real life projects.