



# Deconvolution of Images and Spectra

By Peter A. Jansson

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**Deconvolution of Images and Spectra** is a Second Edition of Jansson's 1984 book, **Deconvolution: With Applications in Spectroscopy**. This landmark volume was the first published on deconvolution to provide both an overview of the field, and practical methods and results. In the twelve years since the first book was published, major advances have taken place. For example, researchers have refined projections onto convex sets, improved understanding of other relaxation methods, applied principles of neural networks, and extended the most effective nonlinear methods to image processing.

The significant advances in the years since the First Edition have created the need for this Second Edition, which addresses both the most recent and effective nonlinear constrained methods, and their practical application to a variety of scientific and engineering fields. **Deconvolution of Images and Spectra** embraces all the advantages of its predecessor by conveying a clear understanding while providing a selection of effective and practical techniques. The authors assume only a working knowledge of calculus, and emphasize practical applications over topics of purely theoretical interest, focusing on areas that have been pivotal to the evolution of the most effective methods. This tutorial is essentially self-contained; readers will find it to be easy to understand and practical.

### Key Features

- \* Reviews concepts important in the development of the deconvolution field
- \* Includes four completely new chapters presenting material on projections onto convex sets, convergence of relaxation methods, and adaptations to image processing in microscopy and astronomy
- \* Emphasizes the most effective constrained methods
- \* Introduces deconvolution to the beginner
- \* Includes recent advances
- \* Unifies and connects varied approaches
- \* Applies to diverse fields
- \* Details applications to image processing and spectroscopy, especially infrared and electron spectroscopy
- \* Provides a guide to the literature

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## Deconvolution of Images and Spectra By Peter A. Jansson Bibliography

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## **Editorial Review**

### Review

"This is an excellent practical handbook for using deconvolution with real data for which the positivity constraint is useful, such as in optical images and spectra...Figures are clear and the text is very readable...We are happy to have this book and recommend it to anyone involved in data analysis or signal processing which involves deconvolution."

--AMERICAN SCIENTIST

### From the Back Cover

Deconvolution is a technique in signal or image processing that is applied when data is difficult to read due to spreading and blurring of corrupt images and experimental results. *Deconvolution of Images and Spectra* is a second edition of Jansson's 1984 book, *Deconvolution with Applications in Spectroscopy* (Academic Press). This landmark volume was first published to provide both an overview of the field, and practical methods and results. In the twelve years since the first book was published, major advances have been made in the field.

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### About the Author

Peter A. Jansson received his bachelors degree from the Stevens Institute of Technology in 1964 and pursued his graduate studies in physics at Florida State University. In 1967 he achieved a practical superresolving solution to the problem of deconvolving noisy spectral data by making effective use of positivity and an upper bound. After receiving his Ph.D. from Florida State in 1968, he joined DuPont Company's Engineering Physics Laboratory. In 1969, he initiated DuPont's program in digital image processing. He has assisted numerous DuPont businesses by developing instruments that apply optics, electronics, and numerical processing in research and manufacturing. Recently his interests have included biomedical imaging, artificial neural networks, color science, product modeling, and product appearance simulation. He authored/edited the previous edition of *Deconvolution*, has 25 other publications, holds 8 U.S. patents, and is a Fellow of the Optical Society of America. He presently holds the position of Research Fellow in Central Research at DuPont.

## **Users Review**

### **From reader reviews:**

#### **Dick McAlister:**

This book untitled *Deconvolution of Images and Spectra* to be one of several books that best seller in this year, this is because when you read this publication you can get a lot of benefit in it. You will easily to buy this specific book in the book retail outlet or you can order it by using online. The publisher on this book sells the e-book too. It makes you easier to read this book, since you can read this book in your Touch screen phone. So there is no reason to you personally to past this book from your list.

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