

tion of bioconfinement strategies that protect the environment and allow deployment of the technology, including a number of recommendations summarized from the previous sections of the report. It also recommends that confinement considerations follow a straightforward path including decision making, research, integrated confinement system designed to the needs of the GEO, monitoring and detection systems and mitigation plans should an escape occur.

Those reading this book desiring a blanket approval or rejection of biotechnology will not find it. Additionally, those looking for detailed guidelines regarding the risks, watch outs, specific safeguards, and success/failure probabilities for a product/organism combination will not find that either. Instead this book provides a strong framework encompassing many aspects that must be considered to responsibly utilize biological technologies while providing acceptable environmental safeguards. It is a balanced report that can help frame the debate regarding rational and safe deployment of genetically engineered organisms.

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S. Liang, *Quantitative Remote Sensing of Land Surfaces*, Wiley & Sons, Hoboken, NJ, USA, 2004, pp. 534 plus CD-ROM. Price US\$ 150.00 (hard back), ISBN 0-471-28166-2

This book provides an excellent graduate-level textbook or professional reference on optical remote sensing. As the title states, emphasis is on the *quantitative* methods that have characterized remote sensing in the NASA Earth Observing System (EOS) era. It is exceptionally well organized, allowing the reader to read the introduction, skip the chapters on modeling if desired, and jump directly to practical algorithms for retrieving biophysical variables from optical remote sensing data. In those latter chapters, it offers an A–Z guide covering sensor calibration, image pre-processing, estimation of multiple land surface variables and validation and scaling methods. Quite distinctive from earlier texts and reflective of the latest direction in remote sensing, this book offers a chapter dedicated to four-dimensional data assimilation algorithms. The book folds smoothly into the last chapter which brings context to all previous discussion with examples of successful applications of derived variables to societal problems. The strength of this book is its quantitative nature and over 1300 current references. Its weakness comes from the laudable attempt to cover all relevant topics related to quantitative remote sensing. That is, you should not expect

this book to be an exhaustive text on such specialties as remote sensing instrumentation, image processing or other-than-optical wavelengths. However, if you are interested in learning about optical remote sensing, with excellent references to publications, web sites and other books, you will certainly find this book useful.

This review would not be complete without mentioning the associated CD-ROM! One must give credit to the author for innovation in presentation. Rather than rely on ever-shifting and disappearing web addresses, the CD-ROM included in the back cover of the book offers data and software related to quantitative remote sensing. This includes sensor spectral response functions, solar irradiance data sets, atmospheric aerosol properties and over 100 surface reflectance spectra. Software includes the most popular radiative transfer and atmospheric correction models. Compiling all these data and software with a concise text to explain and compare the approaches and applications makes this book a real treasure.

Finally, the author deserves credit for making this book a pleasure to read. It is well written and captures the reader's attention with numerous, descriptive figures and tables. This offsets the steady streams of equations, which number well over 100 in many chapters. This book reflects a phenomenal effort by the author, who in turn, credits the sacrifices made by his wife during this extensive project. They can both take pride in this quality contribution to the literature.

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