Rissanen, Jorma. *Optimal Estimation of Parameters.* New York, NY: Cambridge University Press, 2012, 162 pp. $90.00 (Hardbound).

This book presents a comprehensive and consistent theory of estimation. The framework described leads naturally to the maximum capacity estimator as a generalization of the maximum likelihood estimator. This approach allows the optimal estimation of real-valued parameters, their number and intervals, as well as providing common ground for explaining the power of these estimators.

Beginning with a review of coding and the key properties of information, the author goes on to discuss the techniques of estimation, and develops the generalized maximum capacity estimator, based on a new form of Shannon's mutual information and channel capacity. Applications of this powerful technique in hypothesis testing and denoising are described in detail.

Offering an original and thought-provoking perspective on estimation theory, Jorma Rissanen's book is of interest to graduate students and researchers in the fields of information theory, probability and statistics, econometrics, and finance.

JORMA RISSANEN was a member of research staff in the IBM Almaden Research Center from 1965 to 2001, and is currently Professor Emeritus at Tampere University of Technology, Finland. Among his main results are the introduction of the MDL principle for statistics, the invention of arithmetic coding, and the introduction of variable-length Markov chains with the associated Algorithm Context. He has received many awards, including the 2007 Kolmogorov Medal from the University of London's CLRC, and the 2009 Shannon Award from the Information Theory Society. He received two Outstanding Innovation Awards from IBM, one in 1980 and the other in 1988, and a Corporate Award in 1991.