

Vaidyanathan, P. P., See-May Phoong and Yuan-Pei Lin. *Signal Processing and Optimization for Transceiver Systems*. New York, NY: Cambridge University Press, 2010, 855 pp. \$120.00 (Hardbound).

Presenting the first complete treatment of MIMO transceiver optimization, this self-contained book provides all the mathematical information needed to understand transceiver optimization in a single volume. It begins with a review of digital communication fundamentals, and then moves on to a detailed study of joint transceiver optimization, starting from simple single-input single out-put channels all the way to minimum bit error rate transceivers for MIMO channels. Crucial background material is covered, such as Schur-convex functions, matrix calculus, and constrained optimization, together with eight appendices providing further background material on topics such as matrix theory, random processes, and sampling theory. A final ninth appendix provides a grand summary of all the optimization results. With 360 illustrations, over 70 worked examples, and numerous summary tables provided to aid understanding of key concepts, this book is ideal for graduate students, practitioners, and researchers in the fields of communications and signal processing.

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