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Introduction to Shannon Sampling and Interpolation Theory

R.J. Marks II, *University of Washington, Seattle, WA*

This is the first book in signal analysis solely devoted to the topic of sampling and subsequent restoration of continuous time signals and images. The fundamentals of the sampling theorem are developed in detail and numerous generalizations of them are treated in depth, including those of Papoulis and Kramer. Effects of truncation, data noise and jitter on restoration error are analyzed. The sampling theorem is generalized to higher dimensions, resulting in optimal sampling strategies for certain classes of images. Continuous sampling is also developed in depth, and a signal is restored from knowledge of its structure in one or more disjoint temporal intervals. To allow for effective self study, **Introduction to Shannon Sampling and Interpolation Theory** contains numerous exercises with corresponding selected solutions.

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