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# ABSTRACTS OF PAPERS FROM OTHER JOURNALS

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**Performance of a Postbeamformer Interference Canceller in the Presence of Broadband Directional Signals**, A. Cantoni and Lal C. Godara, *Journal of the Acoustical Society of America*, 76:128, July 1984.

A postbeamformer interference canceller (PIC) is essentially a single-channel noise canceller. Two beams are formed, one in the target direction and another in the interference direction. The interference direction beam is processed with a tapped delay filter before being subtracted from the target beam to yield the system output. This paper presents a detailed analysis of the PIC. The performance that can be achieved with PIC is shown to depend critically on the input signal to interference ratio and the tapped delay line length.

**Efficient Editing of Digital Sound on Disk**, Curtis Abbott, *Journal of the Audio Engineering Society*, 32:394, June 1984.

Most professional applications of digital audio require the availability of many channels, but do not require extensive editing of the timing relationships among the channels. For these applications, digital tape technology is appropriate. For other applications, however, more flexibility is needed; in particular, time shifting among channels is essential. Film sound editing and mixing is an important example of this type of application. A method is described whereby these needs can be efficiently served by standard computer disk technology. This method is counterintuitive since it uses scattered allocation techniques for the digital data, yet manages to attain approximately 80% of the theoretical maximum bandwidth of the disk in real-time playback.

**Minimum Bandwidth Signals with Various Combinations of Specified Waveform Parameters**, R. Borge, *IEE Proceedings*, 131:345, July 1984.

For each of four separate conditions placed on a waveform (amplitudes at certain epochs and slopes at those epochs), constraints on the corresponding spectra are obtained for a system of any bandwidth. Waveforms that satisfy certain combinations of amplitude and slope constraints, within a minimum bandwidth, are shown to have unique spectra. The method confirms that Nyquist's first and second conditions are satisfied by the raised-cosine frequency spectrum, and

spectra are obtained for other waveform conditions. The results are of interest in practical systems where constraints are placed on intersymbol interference and telegraph distortion, or as design targets in theoretical systems.

**Generalized Data Reduction for Heterodyne Interferometry**, J. E. Greivenkamp, *Optical Engineering*, 23:350, July/August 1984.

A generalized algorithm for use with digital heterodyne or fringe-scanning interferometers was developed that removes many of the restrictions that had previously applied to the data collection scheme. The required phase steps may be chosen with unequal spacing and to extend over a range greater than  $2\pi$ . The integrating bucket and phase-step approaches produce identical results.

**Charge-Coupled Device Image Acquisition for Digital Phase Measurement Interferometry**, Keith N. Prettyjohns, *Optical Engineering*, 23:371, July/August 1984.

Direct phase measurement interferometry can provide a fast and accurate means of obtaining surface data. Solid-state detector arrays are ideal imaging devices for these instruments. These imagers can be coupled to microcomputers for phase calculation. This article discusses the use of CCD arrays and techniques for digitizing and interfacing these arrays to microcomputers.

**Optimal Electronics Response for Parallel Thermal Imaging Systems**, J. Vortman and A. Bar-Lev, *Optical Engineering*, 23:431, July/August 1984.

The signal and noise flow in a parallel thermal imaging system is described. The analytic model used is based on linear system approximation and includes the human observer. The effect of the electronics on the signal-to-noise ratio is discussed, and an optimal response is calculated for the sampled and unsampled parallel thermal imaging systems.

**Threshold Laser Powers of Textured Optical Storage Media**, G. A. Niklasson and H. G. Craighead, *Optical Engineering*, 23:443, July/August 1984.

This paper presents a calculation of threshold laser writing powers for tex-

ured optical storage media. The threshold powers are affected by the optical properties and microstructure of the textured layer and the thermal conduction from the spot that is machined by the laser beam. The calculations are compared to experimental values obtained with textured germanium and silicon optical storage media. The results give useful information about the optimization of the laser writing process.

**A Low-Cost Frequency Response Analyser**, W. M. Lipscombe and G. H. Stearman, *Radio and Electronic Engineer*, 54:251, June 1984.

The standard Fourier technique for the extraction of the real and imaginary components of a frequency response has been used for many years in commercially available instruments, but their high cost has greatly restricted their use. This paper describes a simple implementation of the Fourier technique which, by use of ingenious circuitry and the rejection of some nonessential facilities, achieves good performance over the most useful frequency range at a fraction of the cost of the more ambitious instruments.

**Implementation of a Computer-Based Data Collection and Analysis System**, M. J. White, *Radio and Electronic Engineer*, 54:263, June 1984.

A data collection and analysis system has been developed for a factory producing beam deflection units for color television picture tubes. The existing factory information system is described and the requirements of a system more suited to a proposed new product are discussed. The production process for the new deflection coil is described in some detail. The collection of production data during the assembly process is then outlined and the computer-based system is described. An indication is given of the performance achieved.

**The Use of Microprocessors in TV Cameras** (in Russian), V. V. Bykov, O. I. Terekhova, and A. Ya. Khesin, *Tekhnika Kino i Televideniya*, 30, April 1984.

This paper considers the basics and some advantages of using microprocessors for automatic alignment, maintaining the parameter stability and technical diagnostics of TV cameras.



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