

Medical Imaging

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Over the past couple of decades, considerable effort has been directed towards identification of methods to quantify the physical characteristics of imaging systems which are essential to effective use of these systems in medical diagnosis. Results of this effort have provided techniques to characterize imaging variables such as resolution, contrast, low contrast perceptibility and noise in a reasonably exact manner, and have facilitated the inter-comparison of imaging systems and techniques in attempts to delineate the most effective approach to a particular imaging application. In applying these quantitative analytic techniques to the imaging process, however, one is confronted with the uncertainty of whether the techniques really characterize the variables of importance to the clinician in his use of the imaging process to arrive at a medical diagnosis.

To explore this uncertainty, a session on "The Laboratory/Clinical Interface in Medical Imaging" was held in September, 1977 in Boston as part of the SPIE/SPSE joint meeting entitled Applications of Optical Instrumentation in Medicine VI. For this session, a number of invited papers were presented by investigators concerned with the relationship between quantifiable physical characteristics of medical images and those possibly more obscure characteristics used by the clinician in arriving at a clinical diagnosis. The five papers included in the following special section of *Optical Engineering* were selected as representative of the presentations which constituted this special session of the Boston meeting.