

Title: Image Chain Analysis for Space Imaging Systems

Abstract :

Image chain analysis has become an important systems engineering tool for assessing the design of imaging systems. Space imaging systems are designed to gather information from vantage points not accessible on Earth but this places a strong requirement on mission assurance since the opportunity to repair or modify the design is prohibitive once the system is launched. By mathematically modeling the image formation process of the entire imaging chain, from the radiometric source to the delivered image data, various space imaging system designs can be studied and analyzed to optimize the image quality and assure that the final system design will meet the user's requirements. An overview of the image chain model for EO imaging systems and the application of image chain analysis to quantify image quality differences between various design concepts will be discussed in this presentation.

Speaker Bio:

Dr. Fiete is currently Chief Technologist of ITT Space Systems with over 25 years of experience in the field of imaging. He received his B.S. in Physics and Math from Iowa State University and his M.S. and Ph.D. in Optical Sciences from the University of Arizona. In 1987 he joined Eastman Kodak's Federal Systems Division as a senior project engineer and became manager of the Imaging Systems Analysis group, responsible for developing and assessing the image quality of novel imaging system designs and advanced processing algorithms. His interests include optics, image processing, image quality prediction models, sparse aperture systems, and psychophysical evaluations. He has authored over 30 technical papers, received 9 patents, and was awarded the Rudolf Kingslake Medal by SPIE.