



INSTITUTE FOR MATHEMATICS
AND ITS APPLICATIONS

IMA
Special
Workshop

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Mathematics in Optical Imaging

Optical imaging encompasses a variety of imaging techniques that rely on illumination light in the ultra-violet, visible and infrared regions of the electromagnetic spectrum. Compared with other imaging methods, optical recording offers several attractions including simplicity, low cost and portability. These advantages make optical imaging techniques extremely useful and accessible in many areas of studies, such as cancer detection in medical imaging, cognitive and language development of infants, and remote sensing in atmospheric and oceanic science. There have been some exciting advancements in optical imaging in the recent decade, and one of them is the combination of optical imaging with other imaging modalities, known as the hybrid method. This method allows different modalities to compensate and complement the stability and accuracy of each other, increasing the detecting/diagnostic value.

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