

# 1 Kronecker Products in Imaging Sciences

By *James G. Nagy*.

Linear algebra and matrix analysis are very important in the imaging sciences. This should not be surprising since digital images are typically represented as arrays of pixel values; that is, as matrices. Due to advances in technology, the development of new imaging devices, and the desire to obtain images with ever higher resolution, linear algebra research in image processing is very active. In this talk we describe how Kronecker and Hadamard products arise naturally in many imaging applications, and how their properties can be exploited when computing solutions of very difficult linear algebra problems.