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Adel Faridani* (faridani@oregonstate.edu). *Signal Analysis and Reconstruction Algorithms in 2D Computed Tomography.*

Computed tomography produces images from the interior of opaque objects. A variety of data acquisition geometries and reconstruction algorithms are available for practical use. In this talk we will use Signal Analysis in the sense of applying the Shannon Sampling Theorem and its generalizations in order to identify potentially efficient sampling schemes that would allow reconstruction with a minimal amount of data. For various data acquisition schemes we will then identify and analyze suitable numerical reconstruction algorithms that achieve the desired performance. (Received September 26, 2017)