962-45-935 **Bernard A Mair*** (bam@math.ufl.edu), Department of Mathematics, University of Florida, P.O. Box 118105, Gainesville, FL 32611-8105. *Limitations of the Radon Transform in Emission Tomography.*

In this talk we discuss the limitations of the Radon transform in modeling the emission - detection process in positron emission tomography (PET). One of the major drawbacks is its inability to account for detector width. We discuss a new transform which provides a precise mathematical model for PET and which accounts for the non-trivial width of PET detectors. (Received September 29, 2000)