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**Rongwei Yang\*** (ryang@albany.edu), Department of Mathematics and Statistics, SUNY at Albany, Albany, NY 12222. *Functional Spectrum of Contractions*. Preliminary report.

By functional model theory, every strict contraction can be represented as a certain operator on the Hardy space over the bidisk  $H^2(D^2)$ . It has always been an intriguing question whether one can use the two variable nature of  $H^2(D^2)$  to make new studies on general contractions. The idea of functional spectrum is an attempt along this line. It associates with every contraction  $T$  a closed subset  $\mathcal{E}_T \subset H^2(D)$ . In general cases, there is a canonical embedding of the classical spectrum  $\sigma_T$  into  $\mathcal{E}_T$ . This talk goes over some basic properties of  $\mathcal{E}_T$  and will bring up an interesting connection with the Invariant Subspace Problem. (Received August 07, 2006)