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Injo Hur* (ihur@math.ou.edu), Department of mathematics, University of Oklahoma, Norman, OK 73019. *Density of Schrödinger Titchmarsh-Weyl m functions on Herglotz functions.*

We will show that all Titchmarsh-Weyl m functions corresponding to Schrödinger operators are dense in all Herglotz functions. To show this, we first discuss a topology on canonical systems which interacts with the uniform convergence of Herglotz functions on compact subsets of the upper half plane. We then characterize canonical systems which can be written in a Schrödinger (eigenvalue) equation and vice versa, which gives us an easy way to construct m functions corresponding to Schrödinger equations in terms of canonical systems. Finally we approximate the canonical system whose m function is a given Herglotz function by canonical systems which can be written in Schrödinger equations such that their m functions converges to a given Herglotz function. (Received December 31, 2014)