

**ANALYTIC CONTINUATION IN WEIGHTED
BACKWARD SHIFT INVARIANT
SUBSPACES, AND RELATED
PROBLEMS**

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An old result by Moeller states that every function in a backward shift invariant subspace can be continued analytically through arcs of the circle not meeting the spectrum of the inner function defining the invariant subspace. We will discuss this result in the setting of weighted backward shift invariant subspaces where Moeller's result is no longer true in general. Such weighted backward shift invariant subspaces arise naturally in the context of kernels of Toeplitz operators. We will also comment on some related problems such as embeddings, and continuation when the weight is "badly" behaved at points of the spectrum of the inner function.