THE HELTON-HOWE TRACE FORMULA FOR SUBMODULES

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Abstract. In this joint work with Yi Wang and Quanlei Fang, we consider a class of submodules $\mathcal{R}$ of the Bergman module $L^2_a(\mathbf{B})$ that are associated with analytic sets $\tilde{M} \subset \mathbf{C}^n$ with $\dim_{\mathbf{C}} \tilde{M} = d$. In analogue to the usual Toeplitz operator on $L^2_a(\mathbf{B})$, we have the "Toeplitz operator for the submodule" R_φ on $\mathcal{R}$. We show that the Helton-Howe trace formula holds for the antisymmetric sum $[R_{f_1}, R_{f_2}, \ldots, R_{f_{2n}}]$, $f_1, f_2, \ldots, f_{2n} \in \mathbf{C}[z_1, \bar{z}_1, \ldots, z_n, \bar{z}_n]$.