1094-47-87 **A. Aleman**, **K. M. Perfekt**, **S. Richter*** (richter@math.utk.edu) and **C. Sundberg**. *Linear Graph Transformations on spaces of analytic functions.* Preliminary report.

Let $\mathcal{H}$ be a Hilbert space of analytic functions with multiplier algebra $\mathcal{M}(\mathcal{H})$, and let

$$\mathcal{M} = \{(f, T_1 f...., T_{n-1} f) : f \in \mathcal{D}\}$$

be an invariant graph subspace for $\mathcal{M}(\mathcal{H})^{(n)}$. Here $n \geq 2$, $\mathcal{D} \subseteq \mathcal{H}$ is a vector-subspace, $T_i : \mathcal{D} \to \mathcal{H}$ are linear transformations that commute with each multiplication operator $M_\varphi \in \mathcal{M}(\mathcal{H})$, and $\mathcal{M}$ is closed in $\mathcal{H}^{(n)}$.

We investigate the existence of non-trivial common invariant subspaces of operator algebras of the type

$$\mathcal{A}_\mathcal{M} = \{A \in \mathcal{B}(\mathcal{H}) : A\mathcal{D} \subseteq \mathcal{D} : AT_i f = T_i A f \ \forall f \in \mathcal{D}\}.$$

In particular, for the Bergman space L^2_a we exhibit examples of invariant graph subspaces of fiber dimension 2 such that $\mathcal{A}_\mathcal{M}$ does not have any nontrivial invariant subspaces that are defined by linear relations of the graph transformations for $\mathcal{M}$. (Received August 12, 2013)