Kathrin Bringmann* (bringman@math.wisc.edu), Department of Mathematics, Van Vleck Hall, University of Wisconsin, Madison, WI 53706. Lifting maps from a vector space of Jacobi cusp forms to a subspace of certain elliptic modular forms.

We define for a Jacobi cusp form $\phi$ the lifting map $S_{D_0,r_0}(\phi)(w)$ as a Fourier expansion, where the Fourier coefficients are certain sums of special values of the Fourier coefficients of $\phi$. Moreover we define for a function $f \in S_k(\frac{1}{2} \operatorname{det}(2m))^-$, i.e., the subspace of cusp forms with respect to Fourier coefficients of $\phi$. Moreover, we define for a function $f \in S_{2k}(\frac{1}{2} \operatorname{det}(2m))^-$, the lifting map $S^*_{D_0,r_0}(\tau, z)$ as a Fourier expansion, where the Fourier coefficients are certain cycle integrals.

Our aim is to prove (under certain restrictions) the following Theorem. Theorem. If $\phi$ is in $J^{cusp}_{k+\frac{2g+1}{2}, m}$, then the function $S_{D_0,r_0}(\phi)(w)$ is an element of $S_{2k}(\frac{1}{2} \operatorname{det}(2m))^-$ if $f \in S_{2k}(\frac{1}{2} \operatorname{det}(2m))^-$ the function $S^*_{D_0,r_0}(f)(\tau, z)$ is in $J^{cusp}_{k+\frac{2g+1}{2}, m}$. The maps $S_{D_0,r_0} : J^{cusp}_{k+\frac{2g+1}{2}, m} \to S_{2k}(\frac{1}{2} \operatorname{det}(2m))^-$ and $S^*_{D_0,r_0} : S_{2k}(\frac{1}{2} \operatorname{det}(2m))^- \to J^{cusp}_{k+\frac{2g+1}{2}, m}$ are adjoint maps with respect to the Petersson scalar products.

(Received October 04, 2004)