

On convolutions of Siegel modular forms

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In this article we study a Rankin-Selberg convolution of n complex variables for pairs of degree n Siegel cusp forms. We establish its analytic continuation to $\frac{n}{2}$, determine its functional equations and find its singular curves. Also, we introduce and get similar results for a convolution of degree n Jacobi cusp forms. Furthermore, we show how the relation of a Siegel cusp form and its Fourier-Jacobi coefficients is reflected in a particular relation connecting the two convolutions studied in this paper. As a consequence, the Dirichlet series introduced by Kalinin [7] and Yamazaki [19] are obtained as particular cases. As another application we generalize to any degree the estimate on the size of Fourier coefficients given in [14]. © 2004 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.