Integral structure of vector-valued Siegel modular forms

We show how one can obtain almost all vector-valued Siegel modular forms from scalar-valued ones of higher degree by using appropriate differential operators, more precisely, only Siegel type Eisenstein series are needed in this procedure. In this way, one gets an integral structure on vector-valued modular forms from a classical result on rational Fourier coefficients (with bounded denominators) of such Eisenstein series. We also report on applications of this result in the theory of p-adic vector-valued modular forms.