On the basis problem for Siegel modular forms of squarefree level
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This is a report on joint work (in progress) with H.Katsurada and R.Schulze-Pillot (in progress). Our result is as follows:

Let $N$ be a squarefree number and $\chi$ a quadratic character mod $N$; then all Siegel modular forms of degree $n$ and weight $k$ for $\Gamma_0(N)$ are linear combinations of theta series attached to lattices $L$ of level dividing $N$ if the weight is large enough (say, $k > 2n$.)

Our methods allow to include non-cusp forms and also vector-valued modular forms.