

[Hagemeier, Heike](#)

Automorphic products of singular weight. (**Automorphe Produkte singulären Gewichts.**)
(German) [Zbl 1211.11048](#)

Mathematik. München: Dr. Hut; Darmstadt: TU Darmstadt, Fachbereich Mathematik (Diss.) (ISBN 978-3-86853-687-4/pbk). 136 p. (2010).

In this doctoral thesis the author constructs holomorphic modular forms of singular weight for the orthogonal group of an even lattice. For lattices of odd prime level she presents explicit formulas for the dimension of the spaces of vector valued modular forms (cusp forms) and for the Fourier coefficients of special vector valued Eisenstein series. She constructs lattices with trivial control space and determines the first Fourier coefficients of their Eisenstein series. On this way she finds a certain lattice, for which there exist Borcherds products of singular weight. She constructs one of these Borcherds products as a difference of two theta series.

Reviewer: [Florin Nicolae \(Berlin\)](#)

MSC:

- [11F11](#) Holomorphic modular forms of integral weight
- [11F41](#) Automorphic forms on $GL(2)$; Hilbert and Hilbert-Siegel modular groups and their modular and automorphic forms; Hilbert modular surfaces
- [11F55](#) Other groups and their modular and automorphic forms (several variables)
- [11F27](#) Theta series; Weil representation; theta correspondences
- [11F30](#) Fourier coefficients of automorphic forms

Cited in **3** Documents

Keywords:

orthogonal group; even lattice; vector valued modular form; vector valued Eisenstein series; Fourier coefficients; Borcherds product; singular weight; theta series