

DIMENSION FORMULAS FOR SPACES OF VECTOR-VALUED SIEGEL MODULAR FORMS OF DEGREE 2 AND LEVEL 2

JONAS BERGSTRÖM AND FABIEN CLÉRY

Abstract: Using a description of the cohomology of local systems on the moduli space of abelian surfaces with a full level 2 structure, together with a computation of Euler characteristics, we find the isotypical decomposition, under the symmetric group on six letters, of spaces of vector-valued Siegel modular forms of degree 2 and level 2.

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Key words: Siegel modular forms, degree 2, level 2, dimension formulas, vector-valued modular forms, moduli space of abelian surfaces.