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| Nota di contenuto | Introduction -- Vector valued modular forms for the metaplectic group. The Weil representation. Poincaré series and Einstein series. Non-holomorphic Poincaré series of negative weight -- The regularized theta lift. Siegel theta functions. The theta integral. Unfolding against F. Unfolding against theta -- The Fourier theta lift. Lorentzian lattices. Lattices of signature (2,l). Modular forms on orthogonal groups. Borcherds products -- Some Riemann geometry on O(2,l). The invariant Laplacian. Reduction theory and L^p-estimates. Modular forms with zeros and poles on Heegner divisors -- Chern classes of Heegner divisors. A lifting into cohomology. Modular forms with zeros and poles on Heegner divisors II. |
| Sommario/riassunto | Around 1994 R. Borcherds discovered a new type of meromorphic modular form on the orthogonal group $O(2,n)$. These "Borcherds products" have infinite product expansions analogous to the Dedekind eta-function. They arise as multiplicative liftings of elliptic modular forms on $(SL)_2(R)$. The fact that the zeros and poles of Borcherds products are explicitly given in terms of Heegner divisors makes them interesting for geometric and arithmetic applications. In the present |

text the Borcherds' construction is extended to Maass wave forms and is used to study the Chern classes of Heegner divisors. A converse theorem for the lifting is proved.