

The Gross-Kohnen-Zagier theorem says that some power series with coefficients given by linear combinations of CM-points on the modular curve $X_0(N)$ is a modular form. We generalize this result to Chow cycles on Shimura varieties of orthogonal type over any totally real field. It is known by work of Borcherds if the ground field is \mathbf{Q} , and the modularity of the cohomology class is known by Kudla-Millson for any totally real field.