ON SIEGEL PARAMODULAR FORMS OF DEGREE 2 WITH SMALL LEVELS

HIROKI AOKI

ABSTRACT. The graded ring of Siegel paramodular forms of degree 2 with level $N = 2$, 3, 4 has a very simple unified structure, taking with character. All are generated by six modular forms. The first five are obtained by a kind of Maass lift. The last one is obtained by a kind of Rankin-Cohen-Ibukiyama differential operator from the first five. This result is similar to the case of the graded ring of Siegel modular forms of degree 2 with respect to $\Gamma_0(N)$, $N = 1, 2, 3, 4$.