

	0	1	2	3	4	5	6	7	8	9
${}^t m'$	(0, 0)	(1, 1)	(0, 0)	(1, 1)	(0, 1)	(1, 0)	(0, 0)	(1, 0)	(0, 0)	(0, 1)
${}^t m''$	(0, 0)	(0, 0)	(1, 1)	(1, 1)	(0, 0)	(0, 0)	(0, 1)	(0, 1)	(1, 0)	(1, 0)

各 characteristic  $m$  に, 上の表によって数字  $i$  を対応させて

$$\begin{aligned}\theta_i(z) &:= \theta_m(\phi(z)) \quad (i = 0, 1, \dots, 9), \\ \theta_{i_1 \dots i_r}^a &:= \theta_{i_1}^a \cdots \theta_{i_r}^a, \quad (a \in \mathbb{N}, i_1, \dots, i_r \in \{0, 1, \dots, 9\})\end{aligned}$$

とおく.

Gundlach の結果より,  $M_{\text{ev}}^s(\Gamma_K) = \mathbb{C}[G_2, G_6, G_{10}]$ .

$$s_6 := 67 \cdot (2^5 \cdot 3^3 \cdot 5^2)^{-1} (G_2^3 - G_6),$$

$$s_{10} := (2^{10} \cdot 3^5 \cdot 5^5 \cdot 7)^{-1} (2^2 \cdot 3 \cdot 7 \cdot 4231 G_2^5 - 5 \cdot 67 \cdot 2293 G_2^2 G_6 + 412751 G_{10})$$

とおくと,  $s_6 = H_6 \in S_6^s(\Gamma_K)$ ,  $s_{10} \in S_{10}^s(\Gamma_K)$  であつて,  $M_{\text{ev}}^s(\Gamma_K) = \mathbb{C}[G_2, s_6, s_{10}]$ .

$$s_5 := 2^{-6} \theta_{01 \dots 9}$$

とおくと,  $s_5 = 2^{-6} \Theta$ . さらに  $s_5^2 = s_{10}$  が成立する. これは両辺の Fourier 係数を比較して証明される. 次の等式も Fourier 係数の比較による.

$$\begin{aligned}G_2 &= 2^{-2} (\theta_0^4 + \theta_1^4 + \theta_2^4 - \theta_3^4 + \theta_4^4 + \theta_5^4 + \theta_6^4 - \theta_7^4 + \theta_8^4 - \theta_9^4) \\ &= \theta_{0145} - \theta_{1279} - \theta_{3478} + \theta_{0268} + \theta_{3569}, \\ s_6 &= 2^{-8} (\theta_{012478}^2 + \theta_{012569}^2 + \theta_{034568}^2 + \theta_{236789}^2 + \theta_{134579}^2).\end{aligned}$$

$$\begin{aligned}s_{15} &:= -2^{-18} (\theta_{07}^9 \theta_{18}^5 \theta_{24} - \theta_{25}^9 \theta_{16}^5 \theta_{09} + \theta_{58}^9 \theta_{03}^5 \theta_{46} - \theta_{09}^9 \theta_{25}^5 \theta_{16} \\ &\quad + \theta_{09}^9 \theta_{16}^5 \theta_{25} - \theta_{67}^9 \theta_{23}^5 \theta_{89} + \theta_{18}^9 \theta_{24}^5 \theta_{07} - \theta_{24}^9 \theta_{18}^5 \theta_{07} \\ &\quad - \theta_{46}^9 \theta_{03}^5 \theta_{58} - \theta_{24}^9 \theta_{07}^5 \theta_{18} - \theta_{89}^9 \theta_{67}^5 \theta_{23} - \theta_{07}^9 \theta_{24}^5 \theta_{18} \\ &\quad + \theta_{89}^9 \theta_{23}^5 \theta_{67} - \theta_{49}^9 \theta_{13}^5 \theta_{57} + \theta_{16}^9 \theta_{09}^5 \theta_{25} - \theta_{03}^9 \theta_{46}^5 \theta_{58} \\ &\quad + \theta_{16}^9 \theta_{25}^5 \theta_{09} - \theta_{46}^9 \theta_{58}^5 \theta_{03} - \theta_{25}^9 \theta_{09}^5 \theta_{16} - \theta_{57}^9 \theta_{49}^5 \theta_{13} \\ &\quad + \theta_{67}^9 \theta_{89}^5 \theta_{23} + \theta_{58}^9 \theta_{46}^5 \theta_{03} + \theta_{57}^9 \theta_{13}^5 \theta_{49} - \theta_{23}^9 \theta_{89}^5 \theta_{67} \\ &\quad + \theta_{18}^9 \theta_{07}^5 \theta_{24} + \theta_{03}^9 \theta_{58}^5 \theta_{46} + \theta_{23}^9 \theta_{67}^5 \theta_{89} + \theta_{49}^9 \theta_{57}^5 \theta_{13} \\ &\quad - \theta_{13}^9 \theta_{57}^5 \theta_{49} + \theta_{13}^9 \theta_{49}^5 \theta_{57})\end{aligned}$$

とおくと  $s_{15} \in S_{15}^s(\Gamma_K)$ ,  $\mathbb{D}(s_{15}) = g_6 \Delta^2$ .