

$$N = 265 = 5 \cdot 53$$

By the Ibukiyama-Kitayama dimension formula,  
 $\dim(S_4(K(265))) = 162$

By the Skoruppa-Zagier dimension formula and Jacobi restriction,  
the lift dimension of  $S_4(K(265))^+$  is 51  
the nonlift dimension of  $S_4(K(265))^+$  is heuristically 100  
 $\dim(S_4(K(265))^+)$  thus is heuristically 151  
 $\dim(S_4(K(265))^-)$  is heuristically 11

$\dim(J_{\{2,265\}}^{\{\text{cusp}\}}) = 8$  (Skoruppa-Zagier), so need to span to within 7 dimensions

$q = 7$  for TraceDown

After TD( $\text{Grit}(J_{\{4,1855\}}^{\{\text{cusp}\}})$ ) and  $(\text{Grit}(J_{\{2,265\}}^{\{\text{cusp}\}}))^2$ ,  
spanned rank in  $S_4(K(265))^+$  is 151  
spanned rank in  $S_4(K(265))^-$  is 0

After Borcherds products,  
spanned rank in  $S_4(K(265))^-$  is 5

Final spanned rank in  $S_4(K(265))^+$  is 151

Final spanned rank in  $S_4(K(265))^-$  is 5

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 $S_2(K(265))^+$  is determined by Jacobi restriction and the  $H4Ndl(3,+)$  test  
( $\dim(H_4(265,3,1))^+ \leq 6$  and this is less than  $\dim(J_{\{2,265\}}^{\{\text{cusp}\}})+1 = 9$ )  
 $S_2(K(265))^- = 0$  by Jacobi restriction and the  $H4Ndl(1,-)$  test  
( $\dim(H_4(265,1,1))^- \leq 6$  and this is less than  $\dim(J_{\{2,265\}}^{\{\text{cusp}\}}) = 8$ )

So  $S_2(K(265)) = \text{Grit}(J_{\{2,265\}}^{\{\text{cusp}\}})$  (dimension 8)