

$$N = 119 = 7 \cdot 17$$

By the Ibukiyama-Kitayama dimension formula,
 $\dim(S_4(K(119))) = 32$

By the Skoruppa-Zagier dimension formula and Jacobi restriction,
the lift dimension of $S_4(K(119))^+$ is 18
the nonlift dimension of $S_4(K(119))^+$ is heuristically 13
 $\dim(S_4(K(119))^+)$ thus is heuristically 31
 $\dim(S_4(K(119))^-)$ is heuristically 1

The heuristic dimensions are correct by the spanning results to follow

$\dim(J_{\{2,119\}}^{\{\text{cusp}\}}) = 0$ (Skoruppa-Zagier), so need to span completely

$q = 5$ for TraceDown

After TD($\text{Grit}(J_{\{4,595\}}^{\{\text{cusp}\}})$) and $(\text{Grit}(J_{\{2,119\}}^{\{\text{cusp}\}}))^2$,
spanned rank in $S_4(K(119))^+$ is 31
spanned rank in $S_4(K(119))^-$ is 0

After Borcherds products,
spanned rank in $S_4(K(119))^-$ is 1

Final spanned rank in $S_4(K(119))^+$ is 31

Final spanned rank in $S_4(K(119))^-$ is 1

 $S_2(K(119))$ is determined by Jacobi restriction and the $H4Ndd(1,+)$ test
($H_4(119,1,1)^+ = 0$)

So $S_2(K(119)) = \text{Grit}(J_{\{2,119\}}^{\{\text{cusp}\}})$ (dimension 0)