$\underline{L} \oplus U_1 \cong \underline{M} \oplus U_2$

rank ✓

L_1, L_2 same sp. #'s
same level
same discrim int.

U_1, U_2 ✓

Suppose U_1, U_2 reg dim

Can Th U_1, U_2 indef. $\Rightarrow$ $\mathbb{Q}$, Π, d, Δ, $U_1, U_2 = pH$ $\begin{pmatrix} 0 & +1 \\ 1 & 0 \end{pmatrix}$

Binary $\Rightarrow$?
Indef. ans stably isom.

$\lambda(p/q) = \varphi(\frac{a}{c}) - \varphi(\frac{b}{d})$

λ: $[1:0] \to +1$
$[0:1] \to -1$

$\lambda(c:d) = \delta(c \equiv d) - \delta(d \equiv 0)$

$\delta(\frac{*}{c} \equiv$ cusp. of $\Gamma_0(N))$

cusp-invariants

$\lambda(\zeta) =$