$$+ b_2 \frac{z_2}{z_3} + b_3 + b_4 \frac{z_4}{z_3} = d_0 + d_1 \left(-\frac{z_1}{z_3}\right) + d_2 \left(z_2 - \frac{z_1 z_4}{z_3}\right)$$

$$+ d_3 \frac{1}{z_3} + d_4 \frac{z_4}{z_3}$$

$\Rightarrow$ $d_3 = b_0$ $\quad b_1 = -d_1 = 0$ $\quad b_2 = 0$, $\quad b_3 = d_0$,
$b_4 = d_4$

$$\Rightarrow \quad f_2 = b_0 + d_0 z_3 + a_2 z_4$$
$$= b_0 + a_1 z_3 + a_2 z_4$$
$$g_2 = a_1 + b_0 w_3 + a_2 w_4$$

$\Rightarrow$ Thus we get

$$\left.\begin{aligned} f_1 &= a_0 + a_1 z_1 + a_2 z_2 \\ f_2 &= b_0 + a_1 z_3 + a_2 z_4 \\ g_1 &= a_0 + b_0 w_1 + a_2 w_2 \\ g_2 &= a_1 + b_0 w_3 + a_2 w_4 \end{aligned}\right| \circledast.$$

(Refer to P47 ~ P49)

$\Rightarrow$ Once we know that f_1, f_2, g_1, g_2 are polynomials of deg 1, we can obtain the same results as above.

To show that $V = i_V^*(H^0(G(2,4), \mathcal{O}(S^*)))$, we need the explicit description of i_V.

Explicitly, if we choose a basis $\sigma_1, \sigma_2, \cdots \sigma_n$ for V and a frame $e_1, e_2, \cdots e_k$ for E locally and write

$\sigma_i = \sum a_{i\alpha} e_\alpha$, then in terms of the corresponding identification $G(n-k, V) \cong G(k, V^*)$ the map ι_V is given by