③ , ⑤
✓ , ✓

Teoria de represetaciones
Notas de la clase de 31-mar-2020

1

④ : $Y_{m,k} = ?$, $m = 1, 2$.

$m=1$: $Y_{1,1}, Y_{1,0}, Y_{1,-1}$

$m=2$: $Y_{2,2}, Y_{2,1}, Y_{2,0}, Y_{2,-1}, Y_{2,-2}$

$Y_{1,0} = x_3$

$Y_{2,0} = ?$

David:

$A_m = \text{span}\{u^p \bar{u}^q x_3^r \mid p+q+r=m\}$

✓ $m=1$: $u, \bar{u}, x_3$ de pesos $1, 0, -1$.
$Y_{1,1}$ $Y_{1,0}$ $Y_{1,0}$

2

$m=2$: $u^2, \bar{u}^2, (x_3)^2, u\bar{u}, ux_3, \bar{u}x_3$

$u^2 \in H_2$, $\bar{u}^2 \in H_2$, $\underbrace{(x_3)^2, u\bar{u}}_{SO_2\text{-inv}}$, $ux_3 \in H_2$, $\bar{u}x_3 \in H_2$

pesos: $2, -2, 0?, 1, -1$

peso 0: $u\bar{u} - 2x_3^2$

$A_2 \approx \mathbb{C}^6$

$\Delta : A_2 \to A_0$

$\mathbb{C}^6 \to \mathbb{C}$

$p = \sum w_i p_i$?

$p_i \in A_2$

$\Delta p = \sum c_i w_i = 0$

3

prob 7:

$P_m(t) = Y_{m,0}(*, *, t) = \left[(t^2-1)^m\right]^{(m)}$ (mod const.)

- - - - - - - -

prop. de $P_m(t)$: ① $\langle p(t), q(t)\rangle := \int_{-1}^{1} \overline{p(t)}\, q(t)\, dt$

②

$\mathcal{P}_m \subset \mathbb{C}[t]$, $p(t) = c_0 + c_1 t + \dots + c_m t^m \in \mathcal{P}_m$.

$\mathcal{P}_m$ = pol. de grado $\leq m$

$\mathcal{P}_0 \subset \mathcal{P}_1 \subset \mathcal{P}_2 \subset \dots \subset \mathcal{P}_m$

$P_0 = 1 \in \mathcal{P}_0$, $P_1 = t$