$$F_0\,(A_{\frac{n+1}{n}}) = \mathbb{C}\cdot\prod_{i<j}(x_i - x_j)$$

$$[\nabla_y^{(c)}, x] = \langle x, y\rangle - c\sum_{i<j}\langle x, x_i - x_j\rangle\langle y, x_i - x_j\rangle (i,j)$$

$$H_c(S_n) = S(V^*)\otimes \mathbb{C}S_n \otimes S(V).$$

THM (B.E.G)

$$V_r = \{f \in S^r(V) : \nabla_y^{(c)}\big|_{c=\frac{r}{n}}(f) = 0 \ , \forall y \in V$$

(a) $V_r \neq 0$ iff $\frac{r}{n} \notin \mathbb{Z}$

(b) $A_{\frac{r}{n}} = S(V)/\langle V_r\rangle$ iff F.d. iff $(r,n) = 1$.

(c) $$\underset{(r,n)=1}{\mathrm{Hilb}}\left(A_{\frac{r}{n}}, t\right) = \left(\frac{1-t^r}{1-t}\right)^{n-1}$$

CONJ. A. $\exists$ a basis B_c of $\mathbb{C}[c]\otimes S(V)$ s.t.

$B_c\big|_{c=\frac{r}{n}}$ is compatible with the ideal $\langle V_r\rangle$.

CONJ. B $\exists$ a family $V_r^{(c)}$ of subspaces in

$\mathbb{C}[c]\otimes S^r(V)$ such that

$\langle V_r^{(c)}\rangle$ is a flat defformation of V_r

I. Quasiharmonic $\left(\nabla_{pq}^{(c)} = \nabla_p^{(c)}\nabla_q^{(c)}\right.$

$f \in S(V)$ is called c-harmonic if $\nabla_p^{(c)}(f) = 0 \quad \forall p \in S(V^*)^{S_n}$.

$$\mathcal{H}^{(c)} = \{c\text{-harmonics}\}.$$