$RT_r(M)$

$$= \sum_{m_1,\dots m_k=0}^{r-2} (-1)^{m_k + \sum_{i=1}^{k} a_i m_i} t^{\sum_{i=1}^{k} \frac{m_i(m_i+2)}{4}} \cdot [m_1+1]$$

$$\prod_{i=1}^{k-1} [(m_i+1)(m_{i+1}+1)] \quad \langle e_{m_k} \rangle D(k_{p'})$$

$\langle e_m \rangle_{D(k_{p'})}$

$$= (-1)^m [m+1] \sum_{k=0}^{m} \sum_{l=0}^{k} (-1)^l t^{\frac{k(k+3)}{4} + p' l(l+1)}$$

$$\frac{\{k\}! \{2l+1\} \{m+k+1\}!}{\{k+l+1\} \{k-l\}! \{m-k\}!}$$

$RT_r(M)$

$$= \sum_{m_1,\dots m_k=0}^{r-2} \sum_{k=0}^{m_k} \sum_{l=0}^{k}$$

$$(-1)^{\sum_{i=1}^{k} a_i m_i + k + l} t^{\sum_{i=1}^{k} \frac{a_i(m_i+2)}{4} - m_k(k+\frac{1}{2}) + (p+\frac{1}{2}) l(l+1) + \frac{k(k+1)}{2}}$$

$$[m_1+1] \prod_{i=1}^{k-1} [(m_i+1)(m_{i+1}+1)] \sin\left(\frac{2l+1}{r} 2\pi\right)$$

$$\cdot \frac{(t)_k\,(t)_{m_k+k+l+1}}{(t)_{k+l+1}\,(t)_{k-l}\,(t)_{m_k-k}}$$

令 $m_i = m_i + 1$

$$= \sum_{m_k=1}^{r-1}\ \sum_{k=0}^{m_k-1}\ \sum_{l=0}^{k}\left(\sum_{m_1\cdots m_{k-1}=0}^{r-1}(-1)^{\sum_{i=1}^{k-1}a_i(m_i-1)}\ t^{\sum_{i=1}^{k-1}\frac{a_i(m_i^2-1)}{4}}\ [m_1]\ \prod_{i=1}^{k-1}[m_i\ m_{i+1}]\right)$$

$$(-1)^{a_k(m_k-1)+k+l}\ t^{-(m_k-1)+(p'+\frac{1}{2})l(l+1)+\frac{k(k+1)}{2}+\frac{a_k m_k^2}{4}}$$

$$\cdot\sin\left(\frac{2(l+1)}{r}2\pi\right)\ \frac{(t)_k\,(t)_{m_k+k}}{(t)_{k+l+1}\,(t)_{k-l}\,(t)_{m_k-k-1}}$$

$$= \sum_{s=0}^{|q|-1}\ \sum_{m_k=1}^{r-1}\ \sum_{k=0}^{m_k-1}\ \sum_{l=0}^{k}$$

$$e^{\frac{-\pi\sqrt{-1}}{r}\frac{C_{k-1}}{q}\left(m_k+sr+\frac{k_{k-1}r}{2}\right)^2}\cdot\sin\left(-\pi\frac{(-1)^k}{rq}(2m_k+2sr)+\sum_{i=1}^{k-1}\frac{(-1)^{i+1}k_i}{c_{i+1}}\right)\cdot\sin\left(\frac{2(l+1)}{r}2\pi\right)$$

$$\cdot(-1)^{\frac{a_k m_k^2}{4}-m_k(k+\frac{1}{2})+\frac{k(k+5)}{2}+(p'+\frac{1}{2})l(l+1)}$$

$$m' = \frac{r}{2}-m_k$$

$$= \sum_{s=0}^{|g|-1} \sum_{m'=-\frac{r-2}{2}}^{\frac{r-2}{2}} \sum_{l=0}^{\frac{r}{2}-m'-1}$$

$$\sin\left(\frac{2l+1}{r}\cdot 2\pi\right) \sin\left(\frac{x}{g} - J(s)\pi\right)$$

$$\cdot e^{\frac{2\pi\sqrt{-1}\,m'}{r} + \frac{2\pi\sqrt{-1}\,(2p+1)l}{r}}$$

$$\cdot e^{\frac{r}{4\pi\sqrt{-1}} V_r(x,y,z)}$$

$$x = \frac{2\pi m'}{r}$$

$$y = \frac{2\pi k}{r}$$

$$z = \frac{2\pi l}{r}$$

$$V_r(x,y,z)$$

$$= \frac{-p}{g}x^2 + \frac{2\pi I(s)}{g}x + 4xy - 2\pi y - 2\pi z$$

$$-2y^2 + (-2-4p)z^2 + \varphi\left(\left[y+z+\frac{8\pi}{r}\right]\right)$$

$$+\varphi\left(\left[y-z+\frac{\pi}{r}\right]\right) + \varphi\left(\left[\pi - x - y - \frac{\pi}{r}\right]\right)$$

$$-\varphi([\pi - x + y + \tfrac{\pi}{2}]) - \varphi[y + \tfrac{\pi}{2}])$$

$$\frac{\partial V_f(x, y_2)}{\partial z}$$

$$= -2\pi - 2(2 - 4p)z$$

$$- 2\sqrt{-1}\log(1 - e^{2\sqrt{-1}(y+z)})$$

$$+ 2\sqrt{-1}\log(1 - e^{2\sqrt{-1}(y-z)})$$

whitehead link :

$$\log w + \log x + \log y + \log z = 2\pi i$$

$$\log(1-w) + \log(1-x) - \log(1-y) - \log(1-z) = 0$$

m_1, l_1, m_2 l_2

u_1 v_1 u_2 v_2

$$u_1 = \log(w-1) + \log(x) + \log(y) - \log(y-1)$$

$$-\pi i$$

$$v_1 = 2\log x + 2\log y - 2\pi i$$

$$u_2 = \log(w-1) + \log(x) + \log z - \log(z-1) - \pi i$$

$$v_2 = 2\log x + 2\log z - 2\pi i$$

u_1 含 w, x, y.

但 $\frac{\partial v}{\partial z}$ 只有两个变量，看起来不能得出粘贴方程.