$\frac{1}{2}$ $\frac{u_N(P_\nu)}{u_N(P_\lambda)} Q_{\nu/\lambda}(\rho)$

$\underbrace{\alpha^{|\nu|-|\lambda|} P_{\nu/\lambda}(q,t)}$ $\underbrace{\beta^{|\nu|-|\lambda|} P'_{\nu/\lambda}(q,t)}$

2 cases.

$\lambda = \lambda(\vec{x})$

m parts

α case, $\nu \succ \lambda$ (horizontal strip)

structure of ν?

09/26/2021

horiz / vertical.

$\lambda(\vec{x}) < \nu$.

$g_i = x_i - x_{i+1} - 1$

gap

~~g_{m-1}~~

$N^{x_m} (N+1)^{g_{m-1}} \cdots (N+m-1)^{g_1} (N+m)^{N+m-1-x_1}$

horiz strips. [α].

1) add any part $j \in \{1, \ldots, N\}$ at the bottom.

NO, $u_N(P_\nu) = 0$ in that case!

2) move first part anywhere to the $\geq N+m+1$; potentially

unstable change

hope that this is going to go to 0 in the limit

3) 'Normal' moves, within $\vec{x}$. → Bernoulli style moves, some of the x's go to ~~[illegible]~~ -1.

[strange looking]

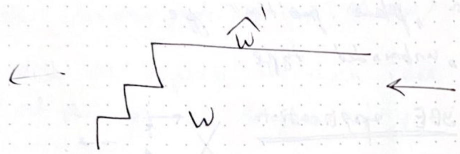
they do both a decrease...?

Could be the same prob.? no?

$$\begin{tikzcd} \boxed{} \arrow[r] \arrow[d] & \boxed{} \arrow[d] \\ \boxed{} \arrow[r] & \boxed{} \end{tikzcd}$$

(write the computation!)

09/28/2021



09/29/2021 Q_λ transitions.

$\lambda(\vec{x}) \prec \nu$

$\nu = \lambda(\vec{x}) + \{\alpha_1, \ldots, \alpha_m\}$

$\alpha_i \in \{-1, 0\}$

also $\lambda_1(\vec{x})$ can grow, this gives

$\lambda_{m+k}(\vec{x} \cup \{N\text{-ish}\})$

$\alpha_i \in \{0, -1\}$

$$\begin{array}{ccc}
\lambda_m(\vec{x}) & \longrightarrow & \lambda_m(\vec{x} + \vec{\alpha}) \\
\downarrow & & \downarrow \\
\lambda^{(N-1)}_{m-1}(\vec{y}) & \longrightarrow & \lambda^{(N-1)}_{m-1}(\vec{y} + \vec{\beta})
\end{array}$$

same, strange!

$\vec{y} = \vec{x} + \boxed{\text{something from } \{-1, 0\}}$

$\beta_i \in \{0, -1\}$?

$\lambda_m(\vec{x}) \prec \vartheta$
↑ vertical strip

$\Downarrow$

$\nu = \lambda_m(\vec{x} + \vec{\alpha})$, $\vec{x} + \vec{\alpha}$, $\vec{\alpha}$ – geom. jumps closer to 0.

geom. w. parallel update!

Can this change # of particles?
possible!

β intertwine

$$\begin{array}{ccc}
m & \longrightarrow & m+1 \\
\downarrow & & \downarrow \\
m & \longrightarrow & m+1
\end{array}$$

but all particles still go closer to 0.
at least with $m+1$, there is hope.

Conjecture, α intertwine gives the same as Δ?

$$\mu_N(P_\lambda) \rightarrow s_\lambda(1, q, \ldots, q^{N-1}) = \prod_{i<j} \frac{q^{\lambda_i - i} - q^{\lambda_j - j}}{q^{-i} - q^{-j}}$$

Schur case first

$$Q_m(\vec x,\vec y) = q^{-\binom{m}{2}+(m-1)(|\vec x|-|\vec y|)} \frac{V(q^{y})}{V(q^{x})} \prod_i \Big[\underbrace{q^{x_i}}_{0} + \underbrace{1-q^{x_i}}_{-1}\Big]$$

$y_i = x_i$ or $x_i - 1$.

$$= q^{-\binom{m}{2}} \frac{f(y)}{f(x)} \cdot \underbrace{\prod\left(q^{x_i} + 1 - q^{x_i}\right)}_{\text{Ind}(x_i)}$$

$$\boxed{f(x) = V(q^x)\, q^{-(m-1)|x|}}$$

how about we try

$$\Lambda(y,z) = \frac{V(q^{z})}{V(q^{y})}\, q^{(m-1)[|y|-|z|]} \quad ?$$

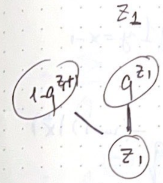
$$= \frac{f(z)}{f(y)}$$

$$\sum_y \frac{\cancel{f(y)}}{f(x)}\, q^{-\binom{m}{2}} \cdot \underbrace{\text{Ind}(\vec x \to \vec y)} \cdot \frac{f(z)}{\cancel{f(y)}}$$

Sum over $\vec y$? gives 1
since this is a probability

however, in the
other way this is not this Σ
but over $y \to z$.

$z_1 > z_2$

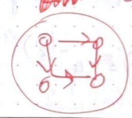


multiply by q, ~~but how?~~

$q \cdot q^{z} + 1 - q^{z+1}$?

Looks like maybe there could
be a operator Λ for $Q^{(m)}$

$$\Lambda Q^{(m)} = Q^{(m+1)} \Lambda$$



Questions remain.

1. Macdonald is a $\frac{f(y)}{f(x)}$ type
   h-transform (no?)
2. Still there would be interturning
3. But we can compute it
   at q-level, explicitly.