Proof of zipping

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$$\langle \exp(\zeta^i y_i + z_i \eta^i + q^i_j z_i \zeta^j) \rangle$$

$$= \langle \exp(y_i \partial_{z_i}) \exp(z_i \eta^i + q^i_j z_i \zeta^j) \rangle$$

$$= \langle \exp((z_i + y_i)\eta^i + q^i_j (z_i + y_i)\zeta^j) \rangle$$

$$= \langle \exp(\eta^i \partial_{\zeta^i}) \exp(y_i \eta^i + q^i_j (z_i + y_i)\zeta^j) \rangle$$

$$= \langle \exp(y_i \eta_i + q^i_j (z_i + y_i)(\zeta^j + \eta_j) \rangle$$

$$\langle z_i \zeta^j \exp(\zeta^\alpha y_\alpha + z_\beta \eta^\beta + q^\beta_\alpha z_\beta \zeta^\alpha) \rangle$$

$$= \langle \partial_{\zeta^i} (\qquad) \rangle$$

$$= \langle \delta_i^j \exp(\quad) + \zeta^j (y_i + q_i^\beta z_\beta) \exp(\quad) \rangle$$

by aside

$=$

Aside.

$$\langle z_i \exp(\quad) \rangle = \langle \partial_{\zeta^i} \exp(\quad) \rangle$$

$$= \langle (y_i + q_i^\beta z_\beta) \exp(\quad) \rangle$$

$$\Rightarrow [z] = y[1] + Q[z]$$

$$\Rightarrow [z] = (1-Q)^{-1} y [1]$$

Similary, approximately,

$$[\zeta] = (1-Q)^{-1} \eta [1]$$