[illegible]

OF OPEN UNITS?

$$\frac{\sum_{n=0}^{N} n \exp(-n \varepsilon \beta)}{Z} = ?$$

$$x = G e^{-\varepsilon \beta}$$

$$= \frac{\sum_{n=0}^{N} n\, x^{n}}{\sum x^{n}} = x \frac{d}{dx} \log Z$$

$$= \frac{(N+1) x^{(N+1)}}{x^{(N+1)} - 1} - \frac{x}{x-1}$$

$T = \infty \quad \beta = 0 \quad x \to G \qquad \langle n \rangle = \frac{(N+1) G^{N}}{G^{N} - 1} - \frac{G}{G-1} = N$

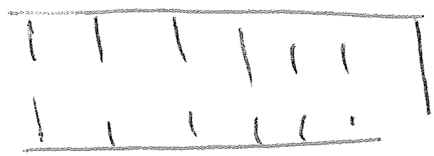
FOR N = 1024 $\Rightarrow$ SHOW GRAPH $\qquad G \to \infty$

$\sim 10^4$

$$\langle n \rangle = N - 1$$

↳ UNZIP FROM LEFT ONLY

IT CHN



N BASE PAIRS

EACH UNZIPPING COST ε

$$Z = \sum_{n=0}^{N} e^{-n\varepsilon\beta} = ?\ \exp \sum_{n=0}^{N} G^{n} e^{-n\varepsilon\beta}$$

$$\sum_{n=0}^{N} x^{s} = \frac{1 - x^{(N+1)}}{1 - x}$$

$$Z = \frac{1 - G^{N+1}\exp\left(-(N+1)\varepsilon\beta\right)}{1 - \exp(-\varepsilon\beta)}$$

$x_c = 1$ SEEMS TO GO CRAZY

DEFINE $y = x - 1$

EXPAND AROUND ZERO

$\log Z \approx \log N + \frac{1}{2} N y + \frac{1}{24} N^2 y^2$

$\langle n \rangle = G$

$N = 100$

CRITICAL $N \left(\frac{x^N}{x^N - 1} \right)$

OK. IT GOES TO $N/2$ NUMERICALLY - GAMBLE PROVED

~~G EXP~~ $G \exp(-\varepsilon / T_c) = 1$

$T_c = \frac{\varepsilon}{\log G} \rightarrow G = 1$

NO TRANS!

N OPEN LINKS

$$P = \frac{x^N}{Z} = \frac{x^N (x - 1)}{x^{N-1} - 1)}$$

AT x_c $P \sim \frac{1}{N}$