

$$\begin{aligned}
 & \sum_p (-1)^p \exp \left\{ i(x_j + 1) d_p \right\} \prod_{j \geq l} [d_j - d_l - i c \sin \frac{(z+l-p)}{f}] \\
 &= \sum_p (-1)^p \exp \left\{ i x_j \right\} \prod_{j \geq l} [d_j - d_l - i c \sin (x_j - x_l)]
 \end{aligned}$$

$$+ \sum_p (-1)^{l p_j} \sum_{j=1}^N k_{p_j} \underbrace{\exp \left\{ i \sum_{n=1}^N x_n k_{p_n} \right\}}_{\prod_{n=1}^n \exp \left\{ i x_n d_{p_n} \right\}}$$

exp {