$$G_{BLA}(l) = \underbrace{G^1(l)}_{O(1)} + 3 \underbrace{\sum_k G^3(l,k,-k)|\overset{*}{U}(k)|^2}_{M \times O(\frac{1}{M}) = O(1)} + O\left(\frac{1}{M}\right) \quad ⑥ ⑧$$

$$\left.\begin{aligned} U(l) &\sim O\left(\tfrac{1}{\sqrt{M}}\right) \\ \overline{U}(l) &\sim O\left(\tfrac{1}{\sqrt{M}}\right) \end{aligned}\right\} O(1)$$

FOR $\|U\|^2 = 1$

$O\left(\frac{1}{M}\right)$: PAIRINGS NOT INTO PAIRS BUT INTO HIGHER MOMENTS

E.G. $k_1 = k_2 = l$

BLA DERIVATION, CONT, $M \to \infty$ IN FIXED BAND

$$G_{BLA}(l) = G^1(l) + 3 \sum_k G^3(l,k,-k)|U(k)|^2$$

$$\sum_{\underbrace{}_{M \times}} f(x_k) \underbrace{\Delta x_k}_{\frac{1}{M}} \quad \text{— RIEMANN INTEGRAL SUM}$$

$$\Big\downarrow M \nearrow \infty$$

$$3 \int_0^B G^3(f,\xi,-\xi)\, S_{uu}(\xi)\, d\xi \quad \text{RIEMANN EQUIVALENT SIGNALS}$$

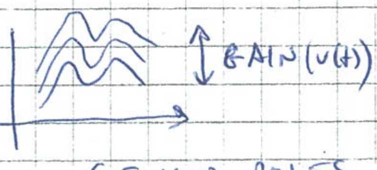
BLA DERIVATION, CONT, WIENER-HAMMERSTEIN SYSTEM

$$G^\alpha = C_\alpha R(k_1) \cdots R(k_\alpha)\, S\left(\sum_1^\alpha k_i\right)$$

$$G^1(l) = C_1 S(l) R(l) \qquad G^3(k_1, k_2, l-k_1-k_2) = C_3 S(l) R(l) |R(k)|^2$$

$$G_{BLA}(l) = G^1(l) + 3 C_3 S(l) R(l) \underbrace{\sum_k |R(k)|^2 |U(k)|^2}_{\xi}$$

$$G_{BLA}(l) = \left(1 + 3 \frac{C_3}{C_1} \xi\right) C_1 S(l) R(l) = (1 + k_3)\, G^1(l)$$



PROPORTIONAL TO THE TRUE LINEAR PART

(FIXED POLES, "WEAK" NONLINEARITY)