

- 1. He notation pe(r/rj) is not good.
- 2. A simpler reasoning:
 - (a) For any realization W blere are equiprobable realizations that correspond to fermuting stimuli \Rightarrow averaged MSE = Peru $\times \frac{1}{L} \sum_{i=1}^{L} (\chi_i \hat{\chi}_i)^2 | \hat{\chi}_i \neq \chi_i$ over W $\frac{1}{2} \sum_{i=1}^{L} (\chi_i \hat{\chi}_i)^2 | \hat{\chi}_i \neq \chi_i$ $\frac{1}{2} \sum_{i=1}^{L} (\chi_i \hat{\chi}_i)^2 | \hat{\chi}_i \neq \chi_i$
 - (b) Perron = $1 P_{noremor}$ = $1 - (\cdots)^{L-1}$ etc.

 - 3. Don't use "in the first step...". Either "the equality is obtained by..." or southing like this; or reformulate differently.

- 1. "The sections "Local error" and "Global error" should be

 sub-sections of "Broad timing curves" (not sections on the

 same level).
- 2. Instead of defining local & global errors, say that here we calculate the MSE in the case in which the response curve is smooth on the scale of the noise (large enough 6, write the inequality). Then errors can be with nearly stimulus (local) or with distant stimulus because resp. curve loops back (global).

MSE = MSE bocal + MSE global

3. $MSE_{local} = \int_{0}^{1} dn \frac{\eta^{2}}{[v(n)]^{2}}$ and

[v/(x)]² = Z Wij Wij u/(x-cj)u/(x-cj)) ijjij'

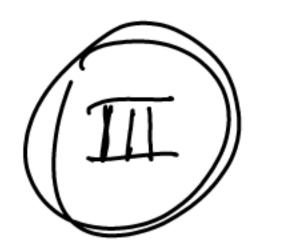
 $\approx \sum_{i \neq j} (W_{ij})^2 [u'(x-c_j)]^2$ (for large L)

Now, by certral-limit blearen: $\sum_{j} (W_{ij})^{2} [u'(n-C_{j})]^{2}$ is a

Gaussian rand. var. vilt mean \approx $\sum_{i} L \cdot \frac{1}{L} \cdot \int_{0}^{1} dy \frac{(x-y)^{2}}{64} A^{2} exp\left(-\frac{(x-y)^{2}}{62}\right) = \frac{\sqrt{\pi}}{2} \frac{NA^{2}}{6}$

& calculate variance; but check & mention ble Lindeberg condition.

4. For MSE global, I would simply say that we approximate the response curve by a set of $\frac{1}{6}$ uncorrelated segrents. Elen the aly thing that changes in the previous eleveration is the prefactor: $L \rightarrow \frac{1}{6}$.



- 1. Call this section "pfluence of input noise on population cooling" and place it after the section on multi-dimensional stimuli.
- 2. This identity is always true. I large inplies that the second term is small; reformulate.
- 3. It is not a development in $\frac{1}{L}$; furthermore, it is not clear whether you do a development in $\frac{1}{L}$ or in $\frac{5}{2}$. Ohe test suggest that it is the former (and indeed there is no nearon that it be the latter since $\frac{5}{2}$ & y can be of the same order). But this seems contradicted by your results, since both 1st & 2nd order terms are of order $\frac{N^2}{L^2}$. So is it really a correct expansion? Are all order terms scaling like $\frac{N^2}{L^2}$?
- 4. Problem related to point 3 above: in a correct expansion, with $J \approx 1 + \varepsilon + \varepsilon^2$, for $\frac{1}{J}$ you would need to include both 1st-order corrector in $\varepsilon + \varepsilon^2$ and second-order correction in ε .



- 1. All the definitions/model explanations should come in the earlier section.
- 2. Define clearly ble MSE. For a multi-discussional stimulus, blese can be variors definitions.