$\hat{\mu}_1^{(2)} = \hat{\mu} + \dfrac{\hat{\sigma}}{2}$ As your suggestion, I started with the equation:

$$\hat{\mu}_1^{(2)} = \frac{\hat{\sigma}}{2},$$

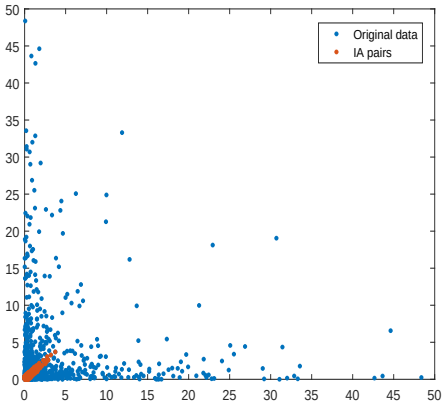
and I estimated sigma by maximum-likelihood in matlab using pairs data. I got the followig result for each permutation:

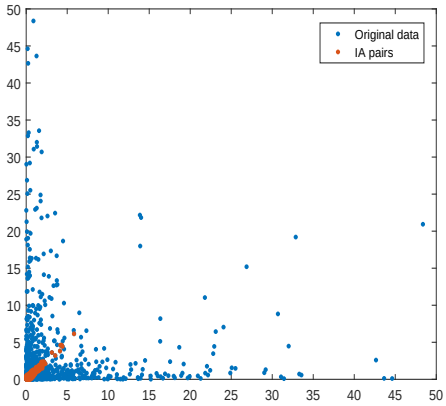
1. $\hat{\mu}_1^{(2)} = 0.2999$
2. $\hat{\mu}_1^{(2)} = 0.2904$
3. $\hat{\mu}_1^{(2)} = 0.2803$
4. $\hat{\mu}_1^{(2)} = 0.2925$
5. $\hat{\mu}_1^{(2)} = 0.3064$
6. $\hat{\mu}_1^{(2)} = 0.2701$
7. $\hat{\mu}_1^{(2)} = 0.2889$
8. $\hat{\mu}_1^{(2)} = 0.2911$
9. $\hat{\mu}_1^{(2)} = 0.2769$
10. $\hat{\mu}_1^{(2)} = 0.2590$

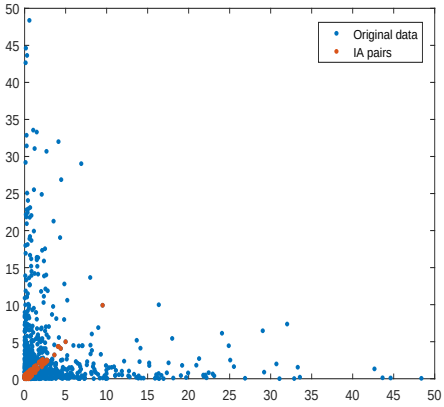
We can see that almost all results are similar.
Also I estimate the *sigma* from original data wher $\hat{\sigma} = 1.02719$ and $\hat{\kappa} = 0.972$, then

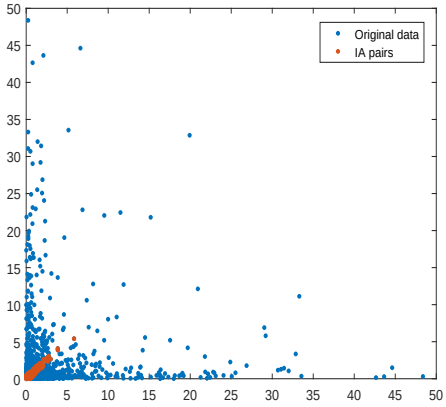
$$\begin{aligned}
\hat{\sigma}^{new} &= \frac{\hat{\sigma}^{original}}{1 + n + n\hat{\kappa}^{original}} \\
\hat{\sigma}^{new} &= \frac{1.02719}{1 + 1 + 0.972} \\
\hat{\sigma}^{new} &= 0.35
\end{aligned}$$

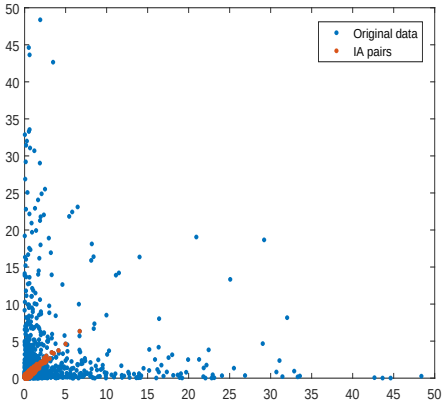
Below are the results of the Matlab program to IA method for 10 permutations, each Figure represents one permutation.

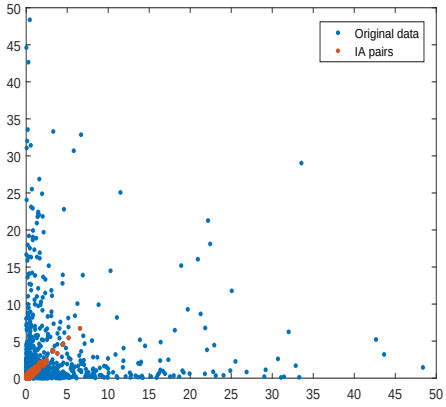

Original data
IA pairs

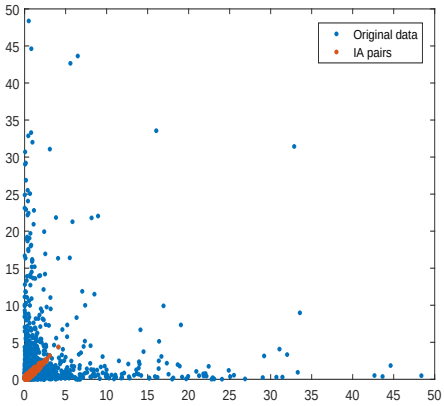

Original data
IA pairs

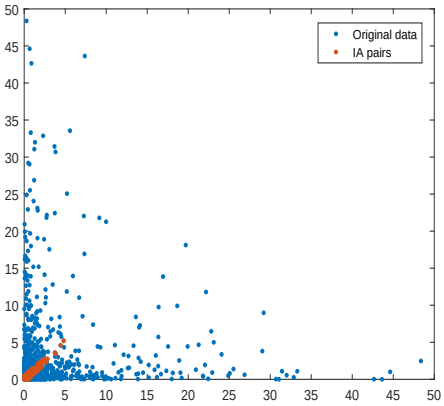

Original data
IA pairs

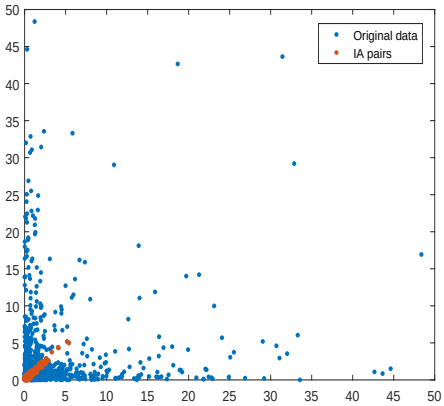

Original data
IA pairs

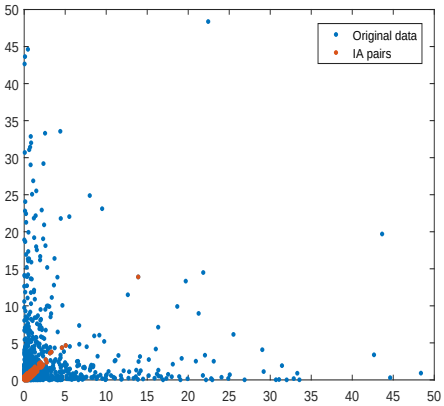

Original data
IA pairs


Original data
IA pairs


Original data
IA pairs


Original data
IA pairs


Original data
IA pairs


Original data
IA pairs