Correction of "Fundamental diagram estimation by using trajectories of probe vehicles"

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This short note corrects a mistake in Seo et al. (2019).

Section 4 of Seo et al. (2019) argues that σ_s denotes standard deviation (SD) of actual fundamental diagram (FD). However, it is incorrect. In fact, σ_s denotes SD of an "average" probe FD, not SD of actual FD.

The correct method for calculating SD of actual FD, denoted by $\breve{\sigma}_s$, is as follows:

$$\breve{\sigma}_s = \frac{\sigma_s w \kappa}{\bar{\alpha}}, \tag{1}$$

where $\bar{\alpha}$ denotes the mean of estimated α_m.

SDs described in Section 5 of Seo et al. (2019) are actually $\breve{\sigma}_s$, not σ_s. Therefore, the estimation results and its interpretation are correct if σ_s are simply replaced by $\breve{\sigma}_s$.

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References

Seo, T., Kawasaki, Y., Kusakabe, T., Asakura, Y., 2019. Fundamental diagram estimation by using trajectories of probe vehicles. Transportation Research Part B: Methodological 122, 40–56.

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