



Direct Measurement
(measure inflowing
water volume and P
concentration)

**Estimate mean and
variance**

**Use as the Prior
Distribution**

Measure by Difference

$$L = DP + X + S$$

$$\text{var}(L) = \text{var}(DP) + \text{var}(X) + \text{var}(S)$$

Use as the Likelihood

Bayesian Analysis

Posterior Distribution of L based on both the
direct measurement and the estimate by difference