

# Focusing on the front end: A framework for incorporating uncertainty in biological parameters in model ensembles of integrated stock assessments - S2

## Appendix

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### 1. Supplemental figures

This section contains additional supporting figures for the analysis that was described in the text.

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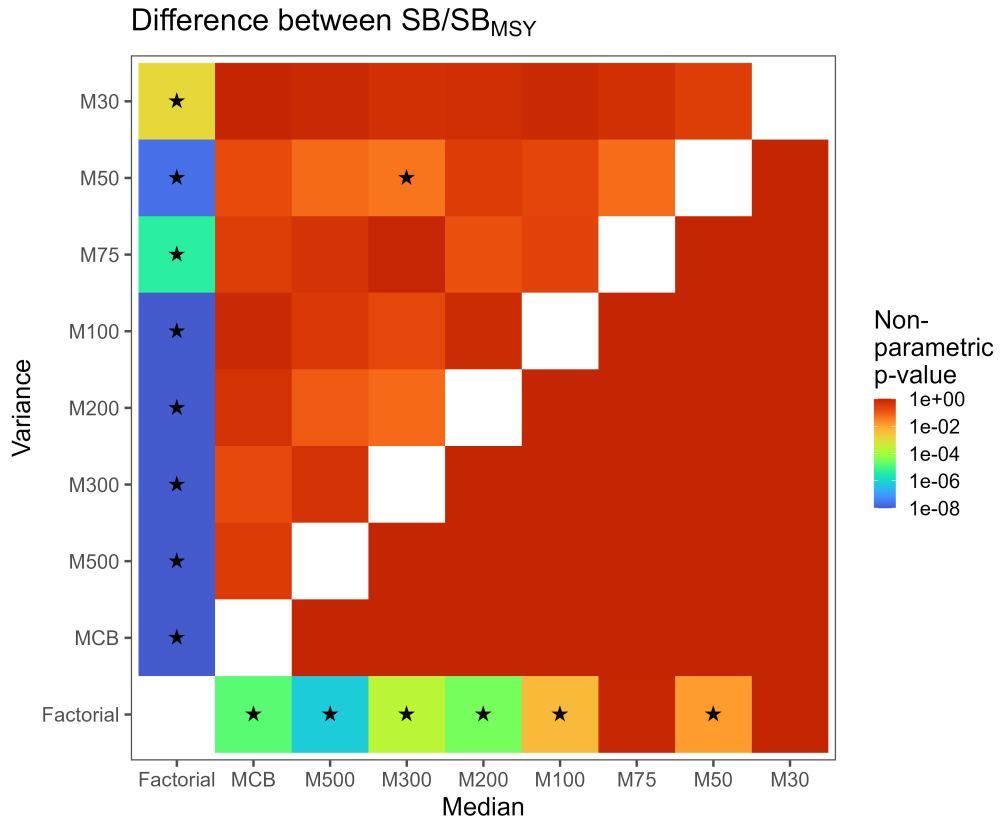


Figure 1:  **$SB/SB_{MSY}$ : Non-parametric p-values for differences in means and variances.** Non-parametric tests were used to test for differences in the means (two-tailed pairwise wilcox test) and variances (Fligner test) of  $SB/SB_{MSY}$  between ensembles. The non-parametric p-value from these tests is depicted by the color. Warmer colors indicate larger p-values and cooler colors indicate smaller p-values. Stars indicate significant difference at an  $\alpha = 0.05$ .

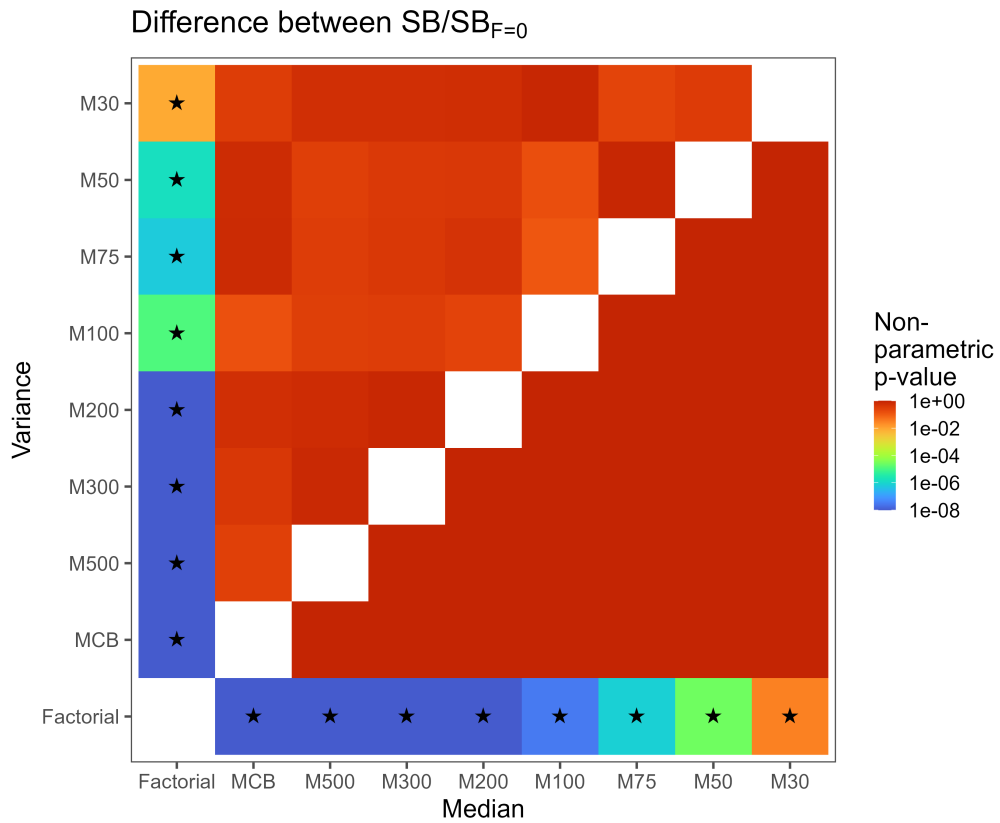


Figure 2:  **$SB/SB_{F=0}$ : Non-parametric p-values for differences in means and variances.** Non-parametric tests were used to test for differences in the means (two-tailed pairwise wilcox test) and variances (Fligner test) of  $SB/SB_{F=0}$  between ensembles. The non-parametric p-value from these tests is depicted by the color. Warmer colors indicate larger p-values and cooler colors indicate smaller p-values. Stars indicate significant difference at an  $\alpha = 0.05$ .

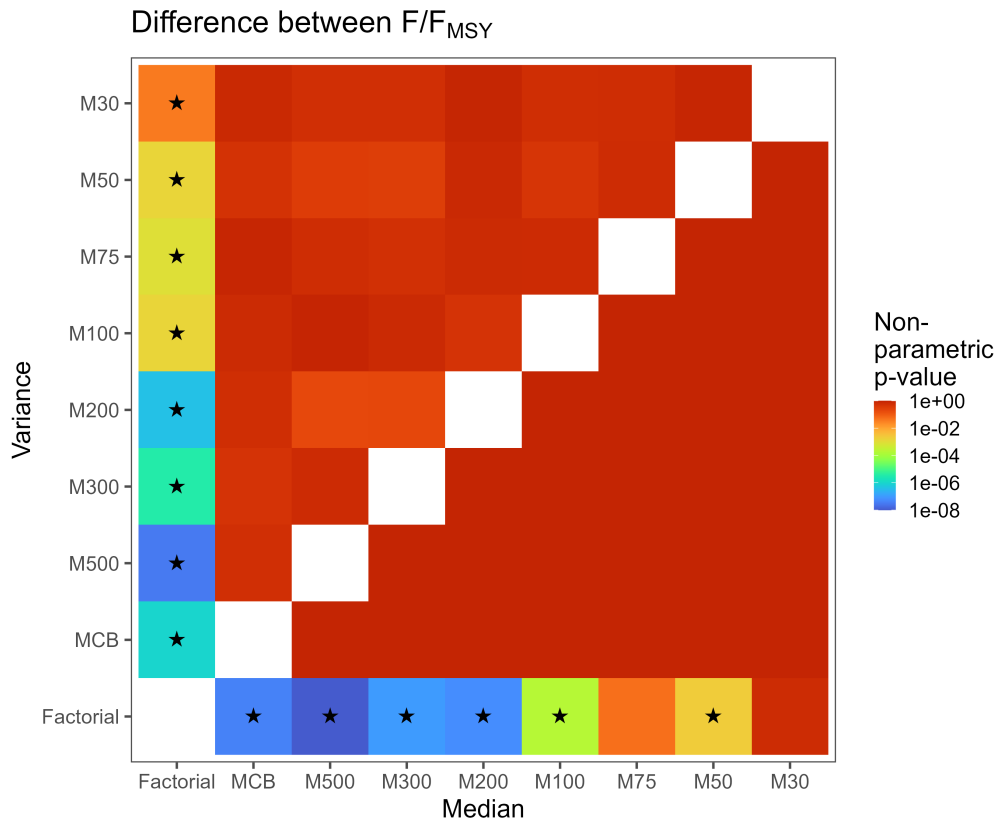


Figure 3:  $F/F_{MSY}$ : Non-parametric p-values for differences in means and variances. Non-parametric tests were used to test for differences in the means (two-tailed pairwise wilcox test) and variances (Fligner test) of  $F/F_{MSY}$  between ensembles. The non-parametric p-value from these tests is depicted by the color. Warmer colors indicate larger p-values and cooler colors indicate smaller p-values. Stars indicate significant difference at an  $\alpha = 0.05$ .