

Table 1. Summary of conditions for Experiment 1.

condition	label	n	p	pm
1	low-dim-low-pm	200	50	0.1
2	high-dim-low-pm	200	500	0.1
3	low-dim-high-pm	200	50	0.3
4	high-dim-high-pm	200	500	0.3

Table 2. Summary of conditions for Experiment 2.

condition	label	n	p	l	pm	λ range
1	low-dim-low-pm-high- λ	200	50	10	0.1	[0.9, 0.97]
2	high-dim-low-pm-high- λ	200	500	100	0.1	[0.9, 0.97]
3	low-dim-high-pm-high- λ	200	50	10	0.3	[0.9, 0.97]
4	high-dim-high-pm-high- λ	200	500	100	0.3	[0.9, 0.97]
5	low-dim-low-pm-low- λ	200	50	10	0.1	[0.5, 0.6]
6	high-dim-low-pm-low- λ	200	500	100	0.1	[0.5, 0.6]
7	low-dim-high-pm-low- λ	200	50	10	0.3	[0.5, 0.6]
8	high-dim-high-pm-low- λ	200	500	100	0.3	[0.5, 0.6]

Table 3. Average imputation time in minutes for the MI methods compared in Experiment 3.

condition	DURR	IURR	blasso	bridge	MI-PCA	MI-CART	MI-RF	MI-OP
low-dim ($n = 1000$)	73.20	75.90	1.40	8.10	0.60	4.00	11.30	2.20
high-dim ($n = 300$)	6.10	9.70	0.50	3.20	0.40	1.40	4.70	1.90

^a In both conditions, the number of data columns was 243; n refers to the sample size.

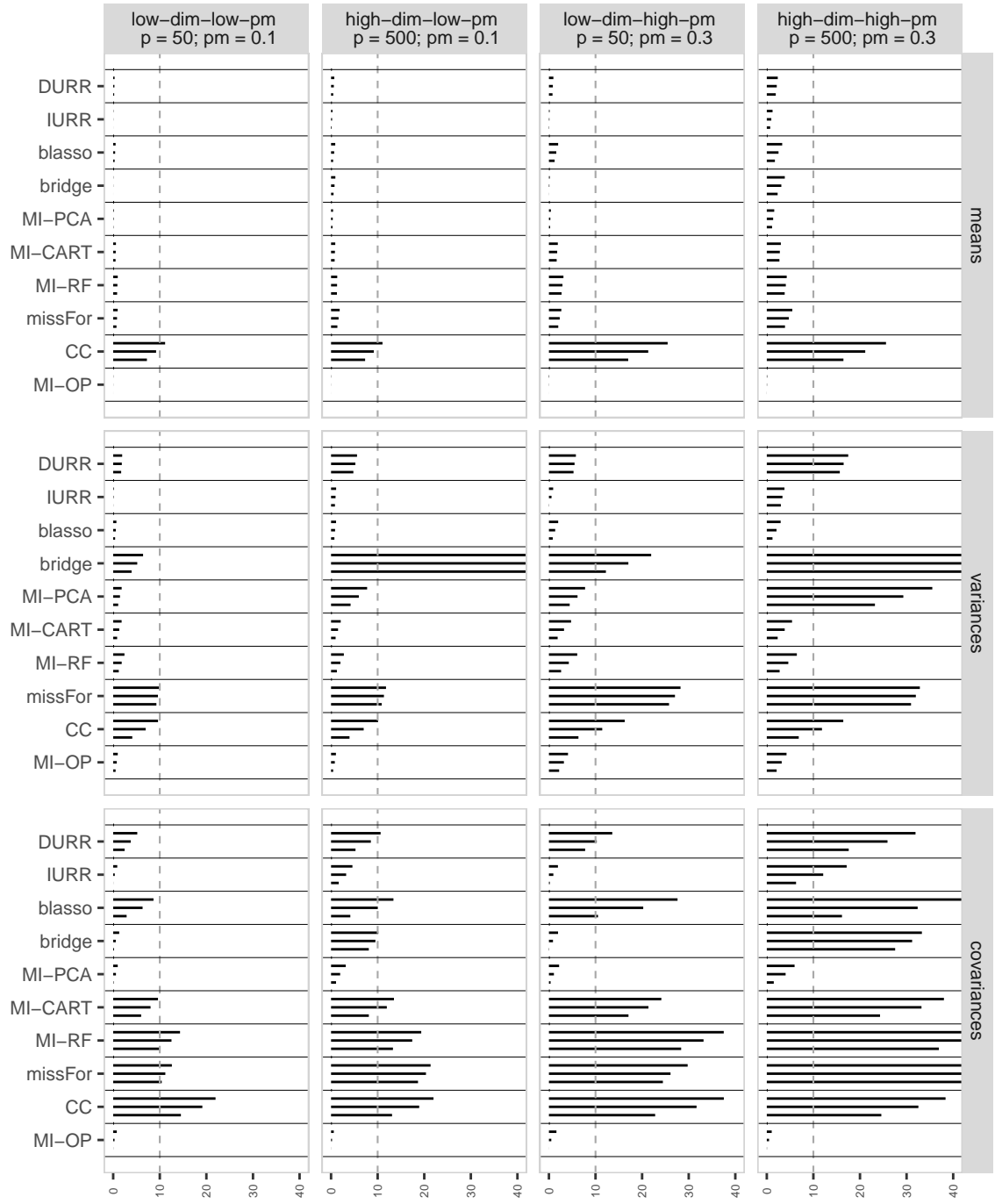


Figure 1. Maximum, average, and minimum absolute percent relative bias (|PRB|) for item means, variances, and covariances in Experiment 1.

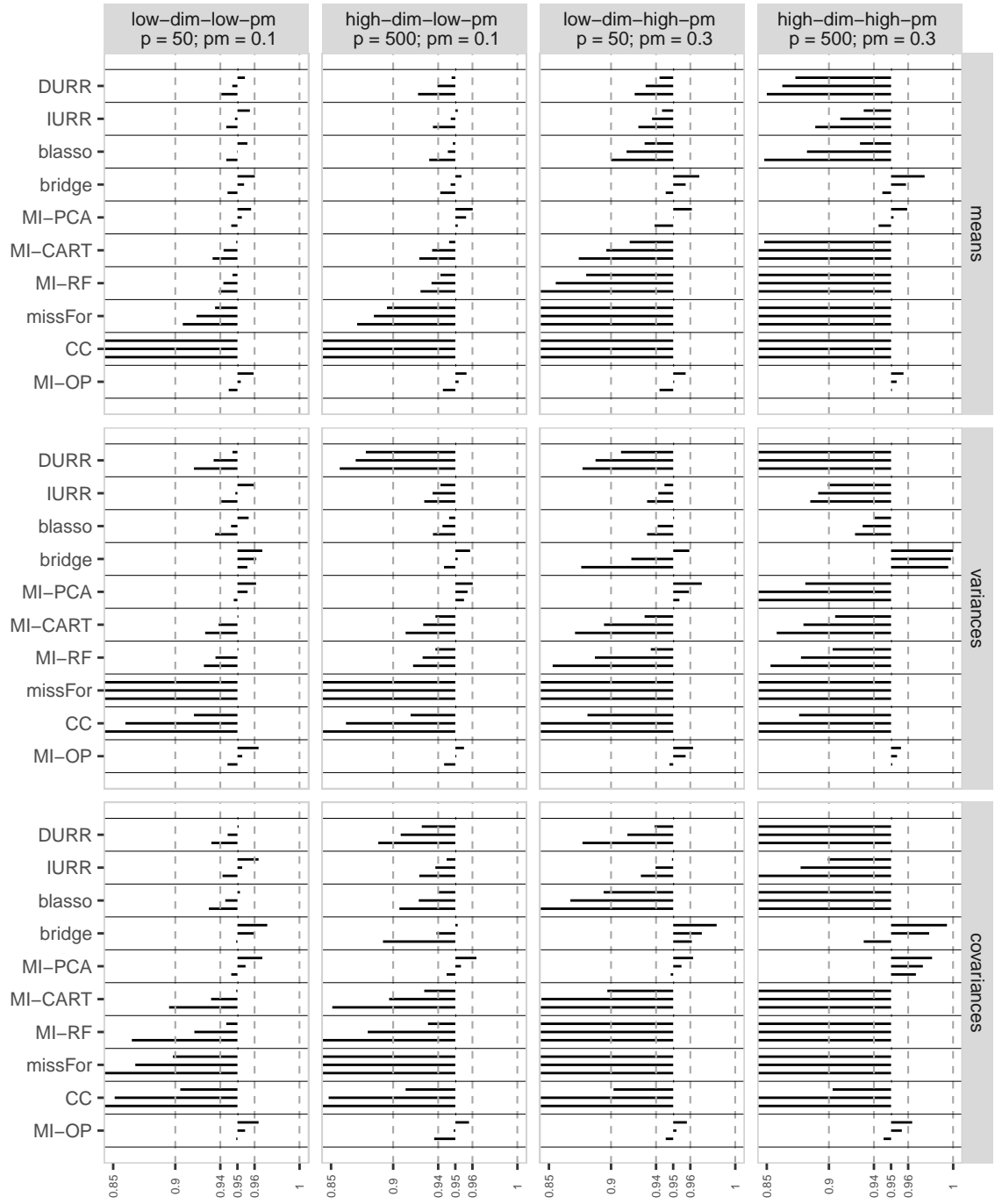


Figure 2. Maximum, average, and minimum CIC for item means, variances, and covariances in Experiment 1.

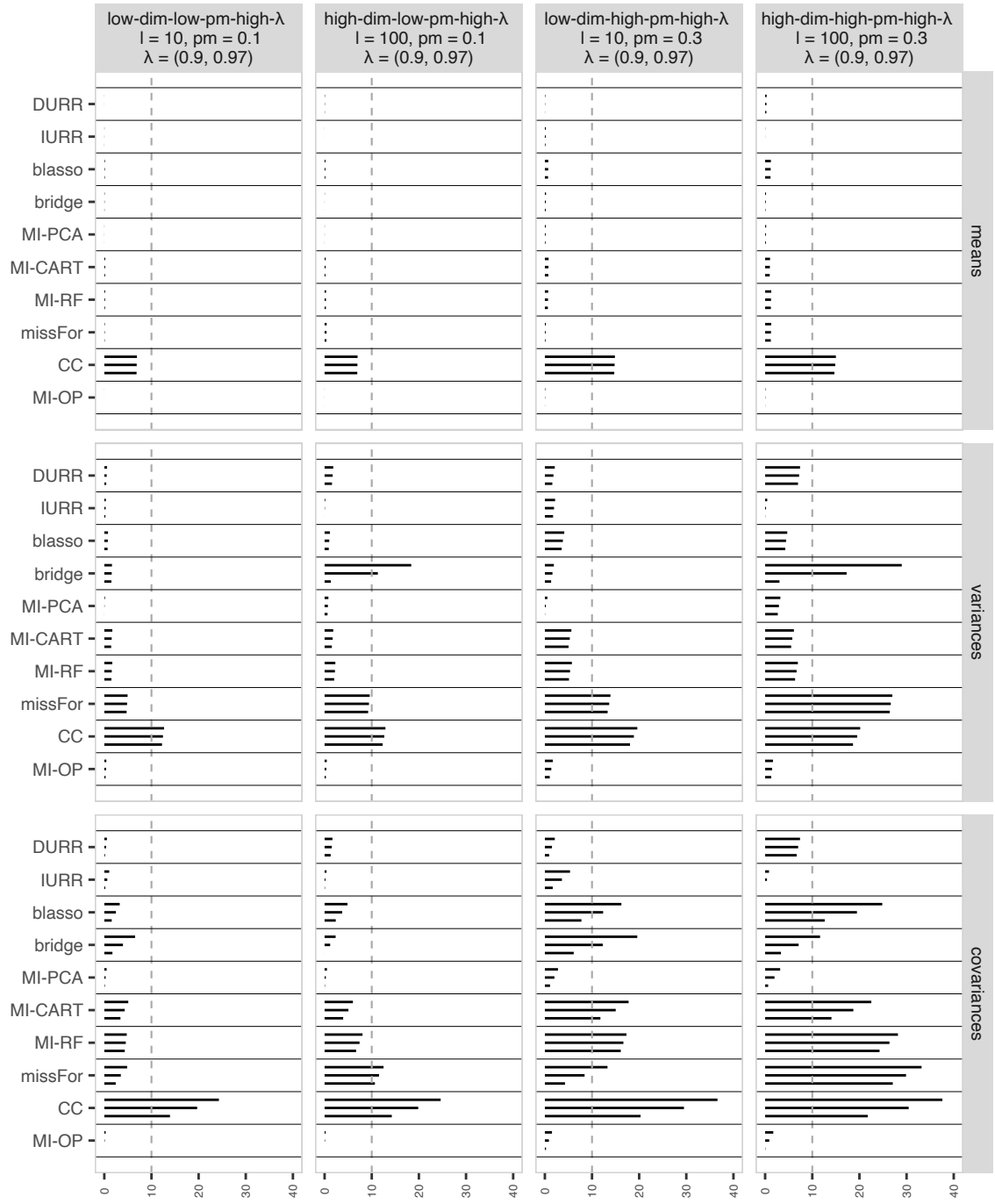


Figure 3. Maximum, average, and minimum absolute Percent Relative Bias (|PRB|) for item means, variances, and covariances in the conditions of Experiment 2 with high factor loadings.

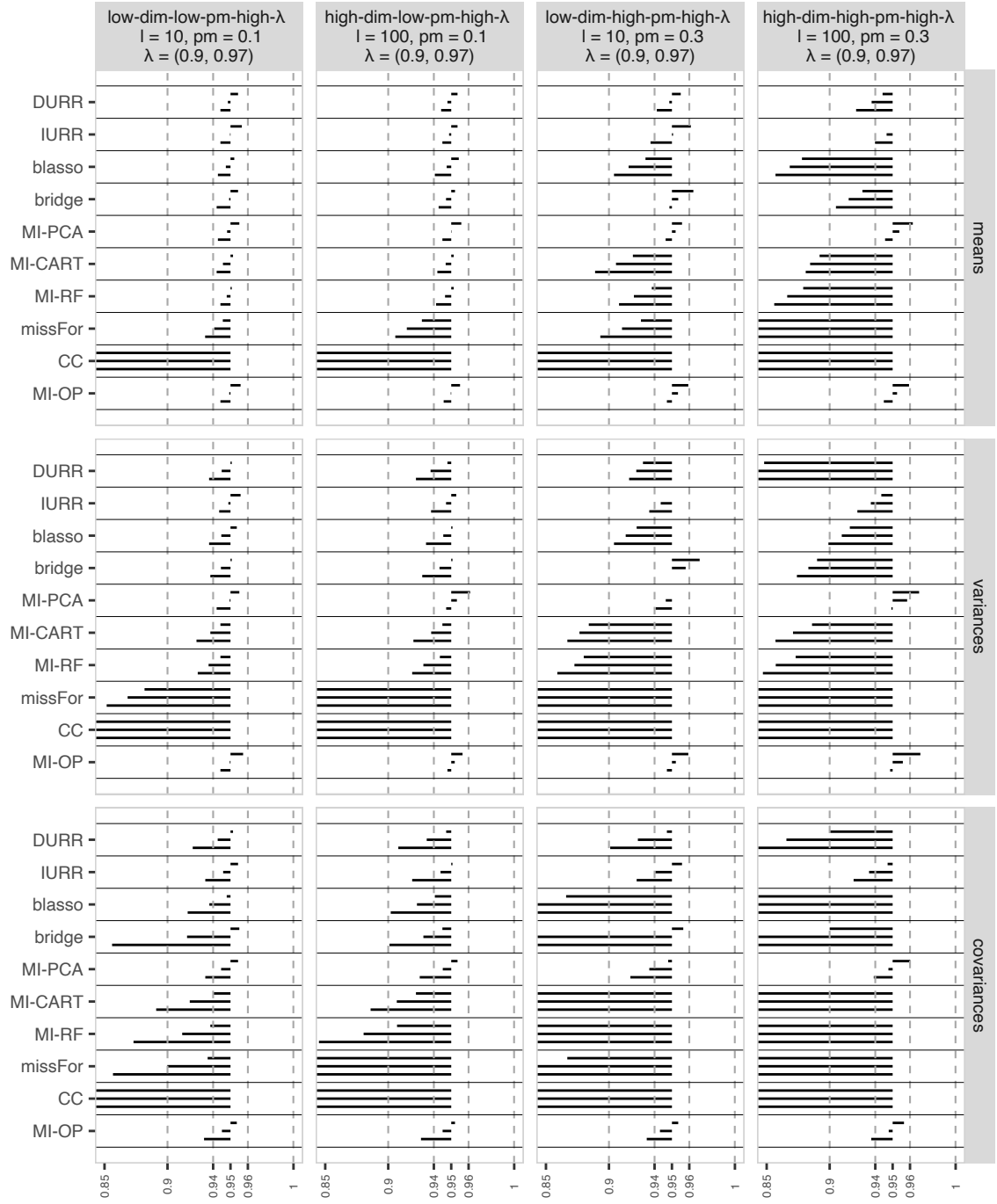


Figure 4. Maximum, average, and minimum CIC for item means, variances, and covariances in Experiment 2 in the conditions of Experiment 2 with high factor loadings.

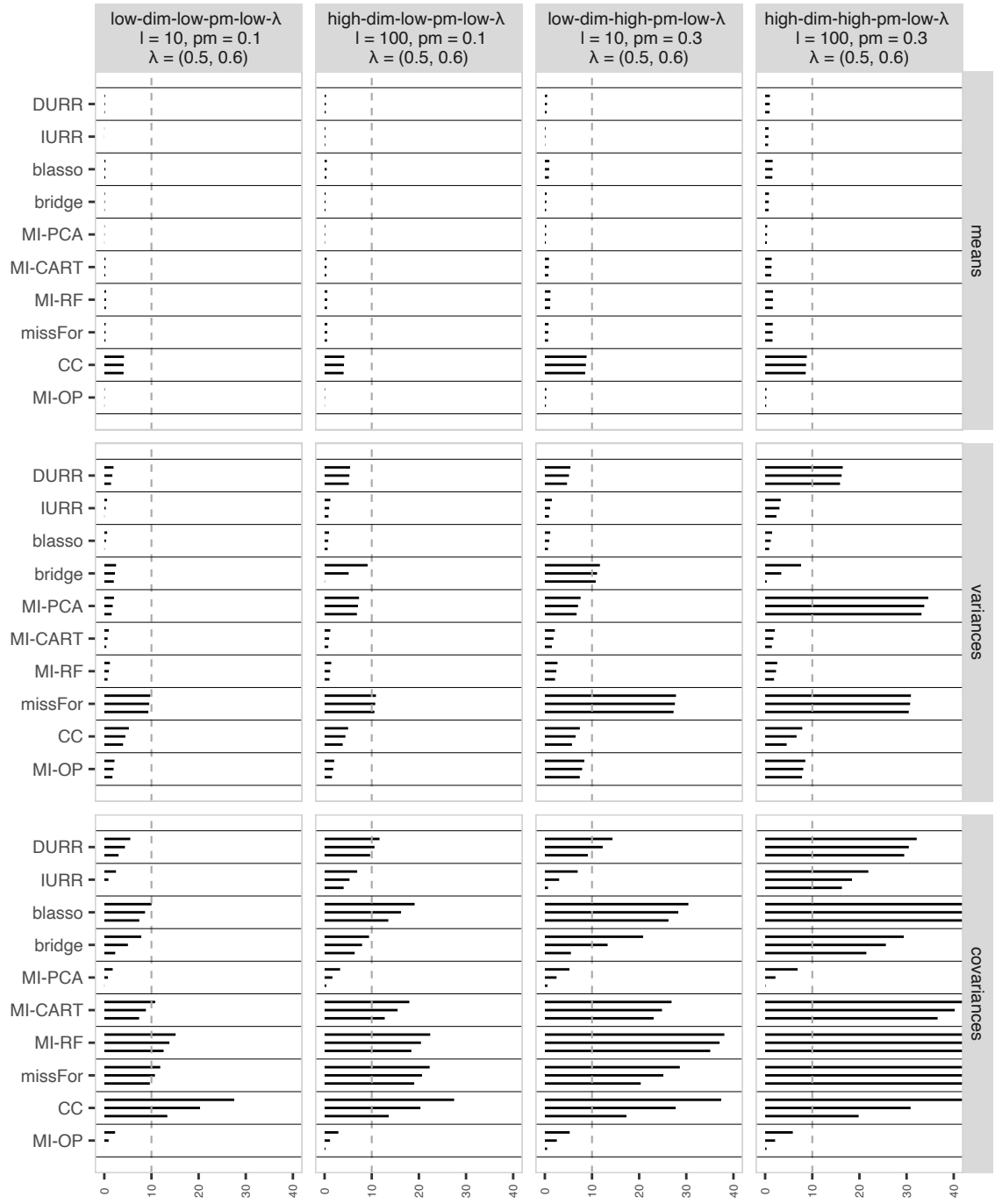


Figure 5. Maximum, average, and minimum absolute Percent Relative Bias ($|PRB|$) for item means, variances, and covariances in the conditions of Experiment 2 with low factor loadings.

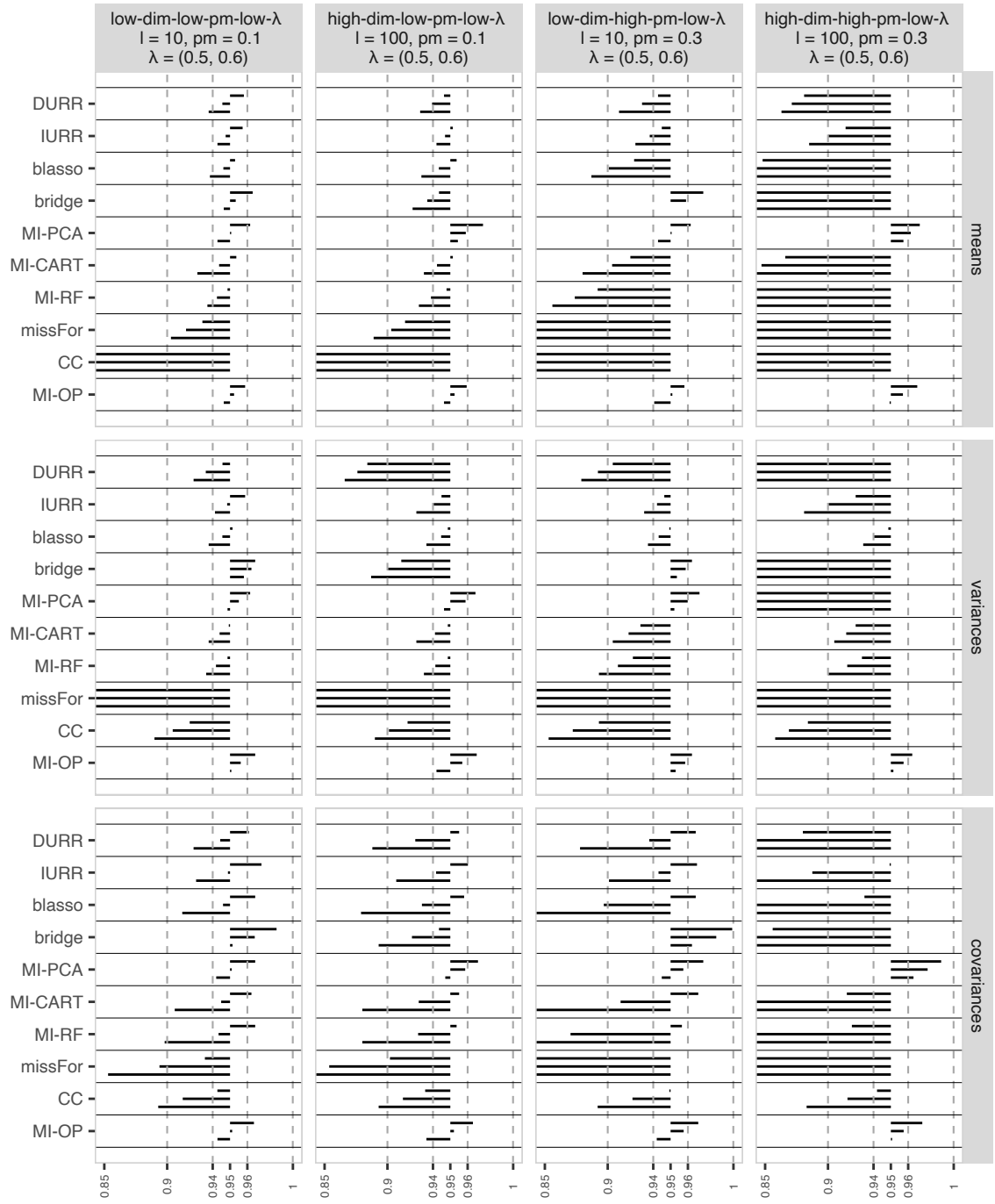


Figure 6. Maximum, average, and minimum CIC for item means, variances, and covariances in the conditions of Experiment 2 with low factor loadings.

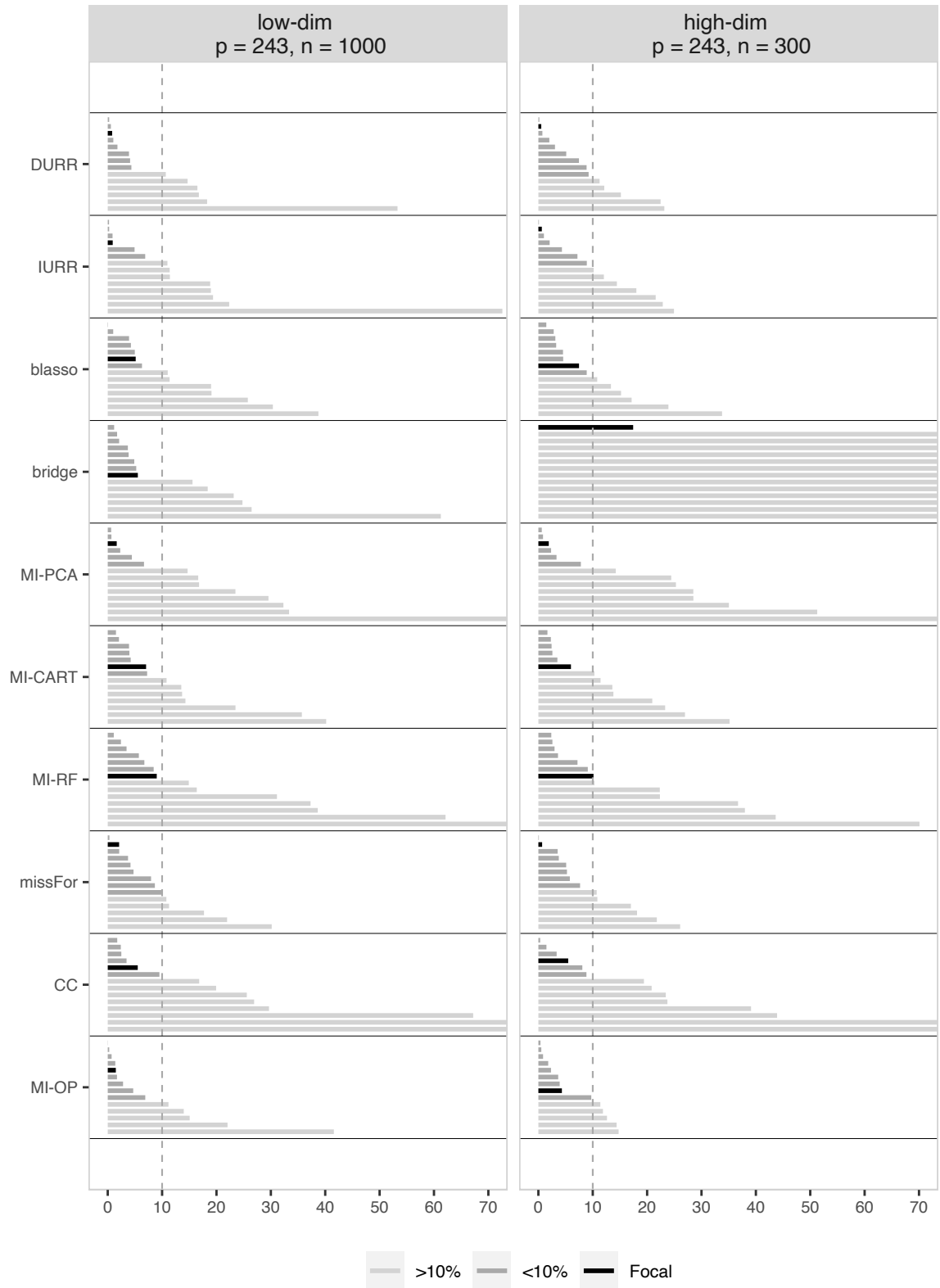


Figure 7. |PRB| for all the model parameters in model 2. For each method, the PRBs are reported by increasing absolute value. The |PRB| for the focal parameter estimate is reported in black.

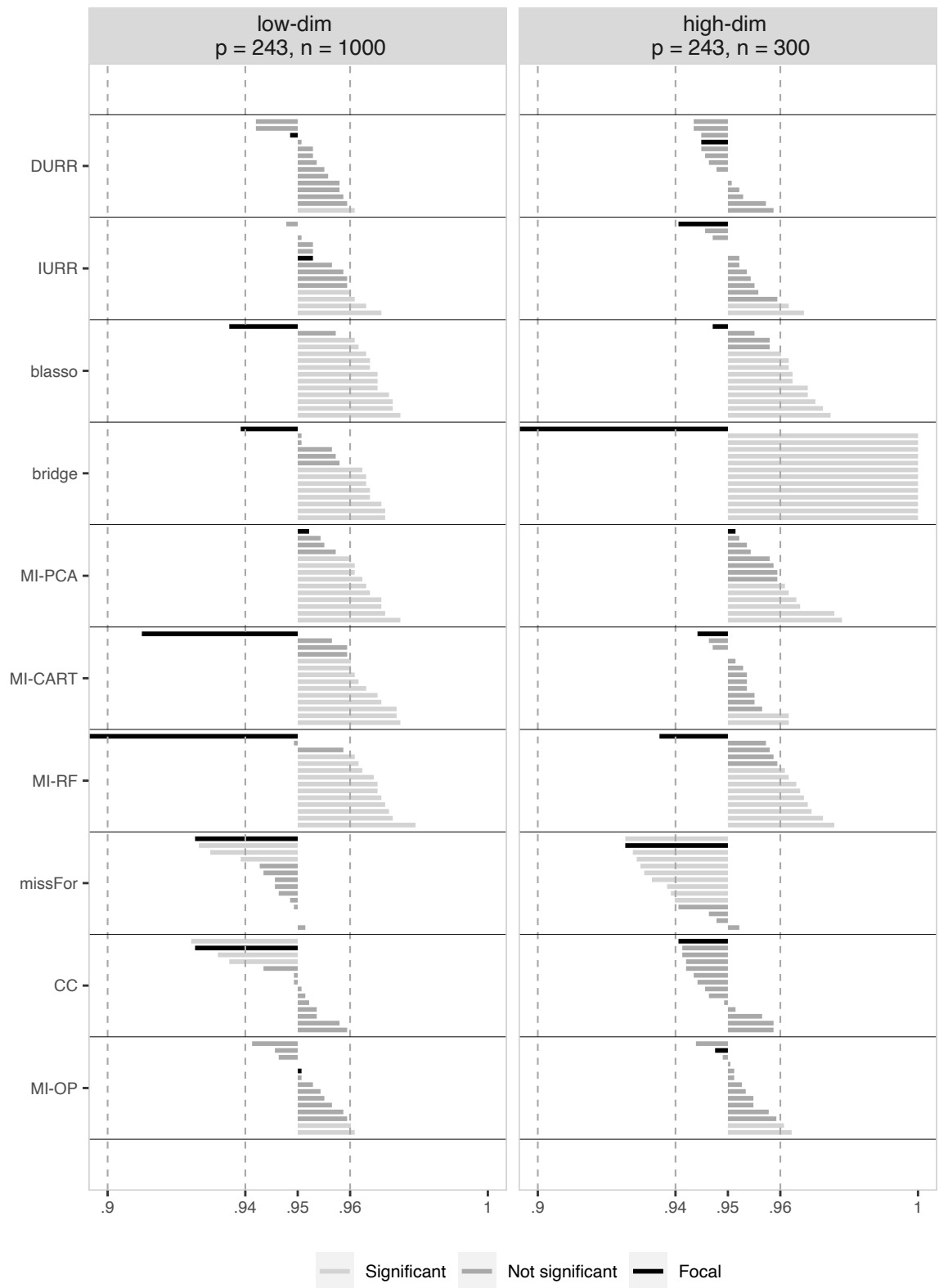


Figure 8. CIC for all model parameters in model 2. For each method, the CICs are reported by increasing value. The CIC of the focal parameter is reported in black.