#### Main of PCB data\_gen\_model: main data\_gen\_model: main data\_gen\_model: main est\_model: main+inter est\_model: main+inter est\_model: main+inter pro: 0.2 pro: 0.6 pro: 0.8 27 -27 -30 -26 -26 **-**25 -28 -25 -24 -24 -26 -23 -23 -24 -22 -22 **-**22 -21 -21 -20 -20 -20 -19**-**19 -18 -18 -18 -17 -16. 17 -16-16 14 -15 **-**15 -GCTA\_maiprop\_maintrue\_main GCTA\_maiprop\_maintrue\_main GCTA\_maiprop\_maintrue\_main value data\_gen\_model: main+inter data\_gen\_model: main+inter data\_gen\_model: main+inter est\_model: main+inter est\_model: main+inter est\_model: main+inter pro: 0.2 pro: 0.6 pro: 0.8 30 -25 **-**25 -25 -20 -20 -20 -15**-**15 -15 -10-10 -10-5 -5. 0 -0 --5 **-**-5 **-**-10 **-**GCTA\_maiprop\_maintrue\_main GCTA\_maiprop\_maintrue\_main GCTA\_maiprop\_maintrue\_main

method

method

GCTA\_main

prop\_main

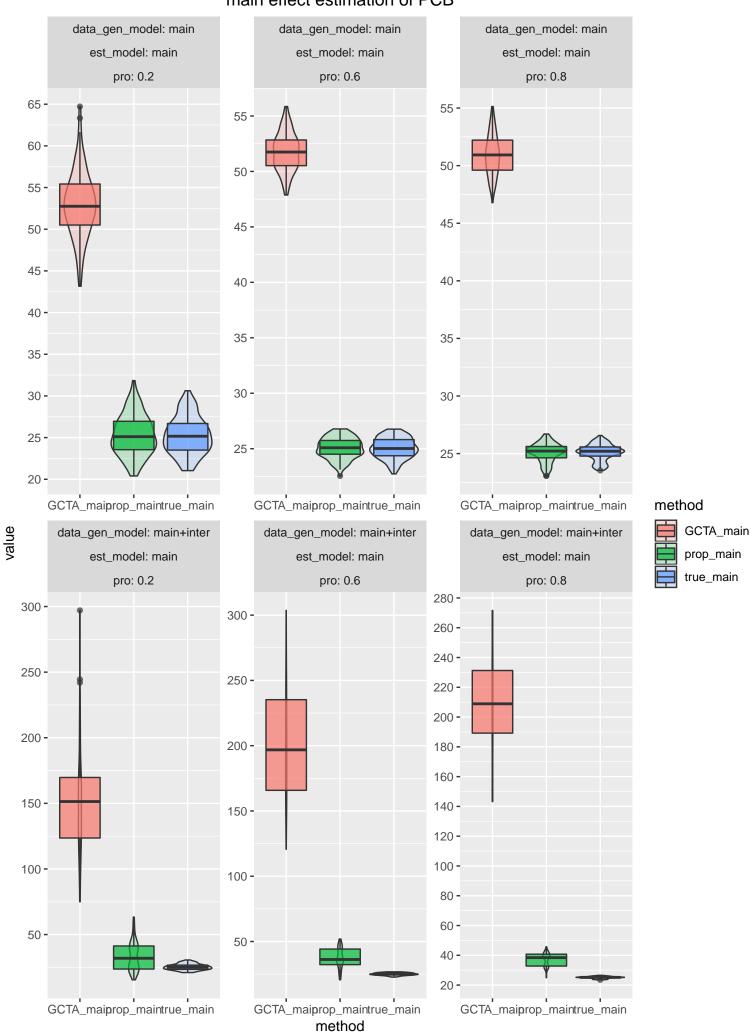
true\_main

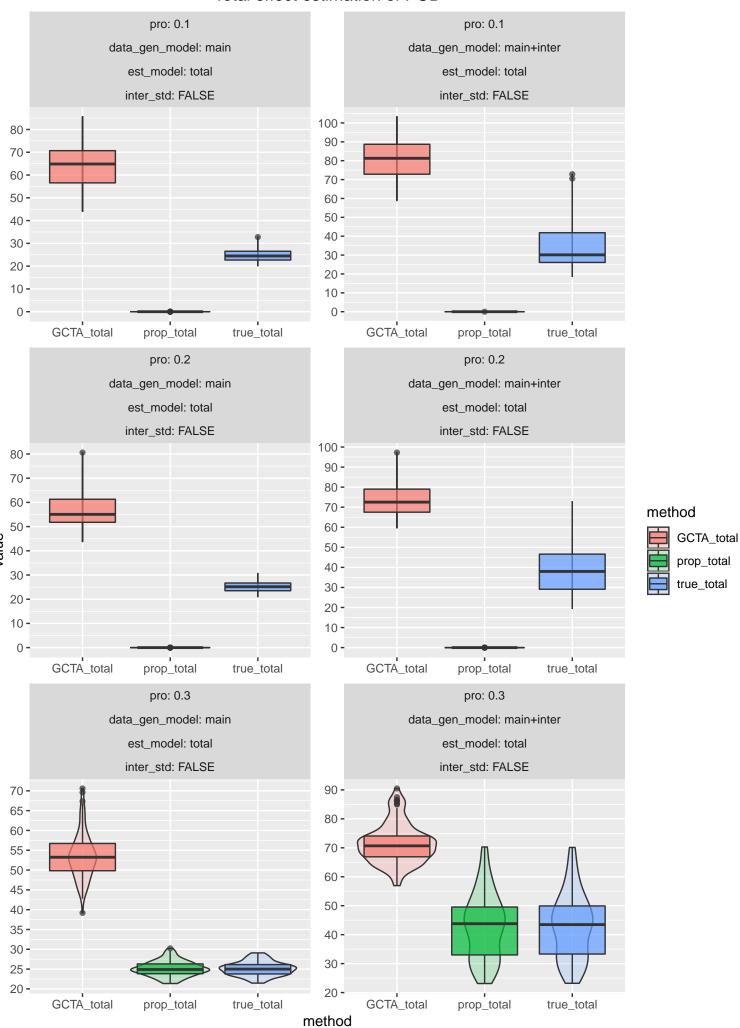
#### Interaction of PCB data\_gen\_model: main data\_gen\_model: main data\_gen\_model: main est\_model: main+inter est\_model: main+inter est\_model: main+inter pro: 0.2 pro: 0.6 pro: 0.8 4.5 -0.4 -4.0 -0.6 -0.3 -3.5 -0.2 -0.4 -3.0 -0.1 -2.5 -0.2 -2.0 -0.0 -1.5 -0.0 --0.1 **-**1.0 --0.20.5 -0.0 --0.3-0.5 -0.4 · -0.4-1.0-0.6 GCTA\_intermanctiontertaunctionimteraction GCTA\_intermanctionteraction GCTA\_intermanctionimteraction GCTA\_intermanctionimteraction method GCTA\_interaction data\_gen\_model: main+inter data\_gen\_model: main+inter data\_gen\_model: main+inter prop\_interaction est\_model: main+inter est\_model: main+inter est\_model: main+inter true\_interaction pro: 0.2 pro: 0.6 pro: 0.8 50 -45 -40 -45 **-**40 -35 -40 -35 -30 -35 -30 -30 -25 -25 -25 -20 -20 -20 -15**-**15 -15**-**10 -10 -10 -5 -5 -5 -

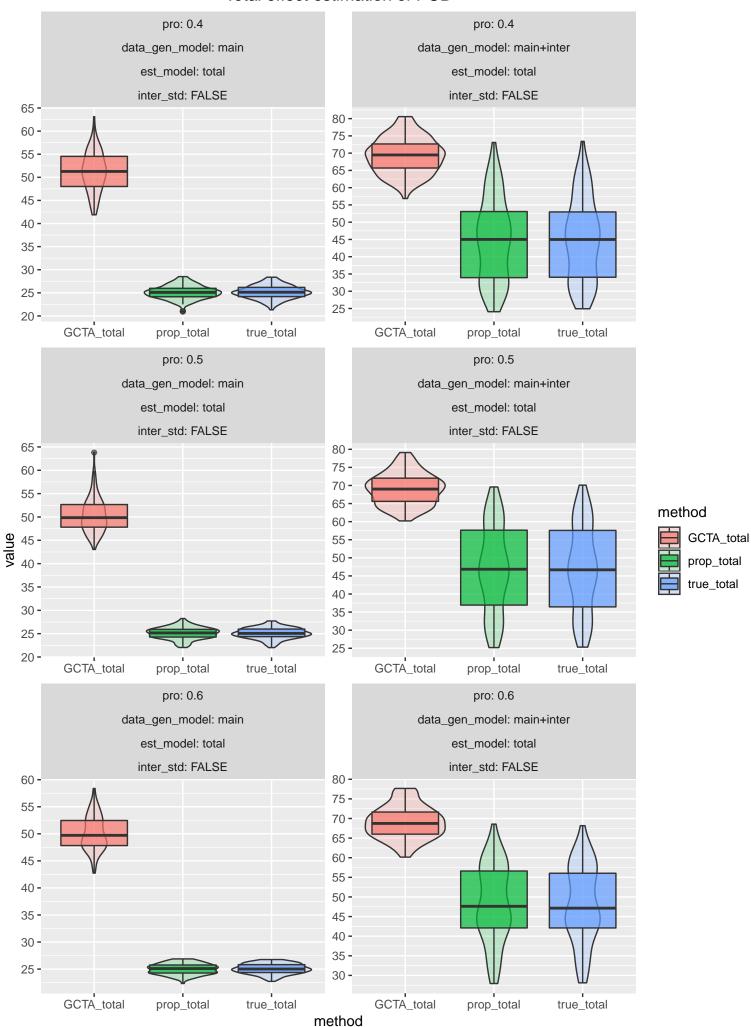
value

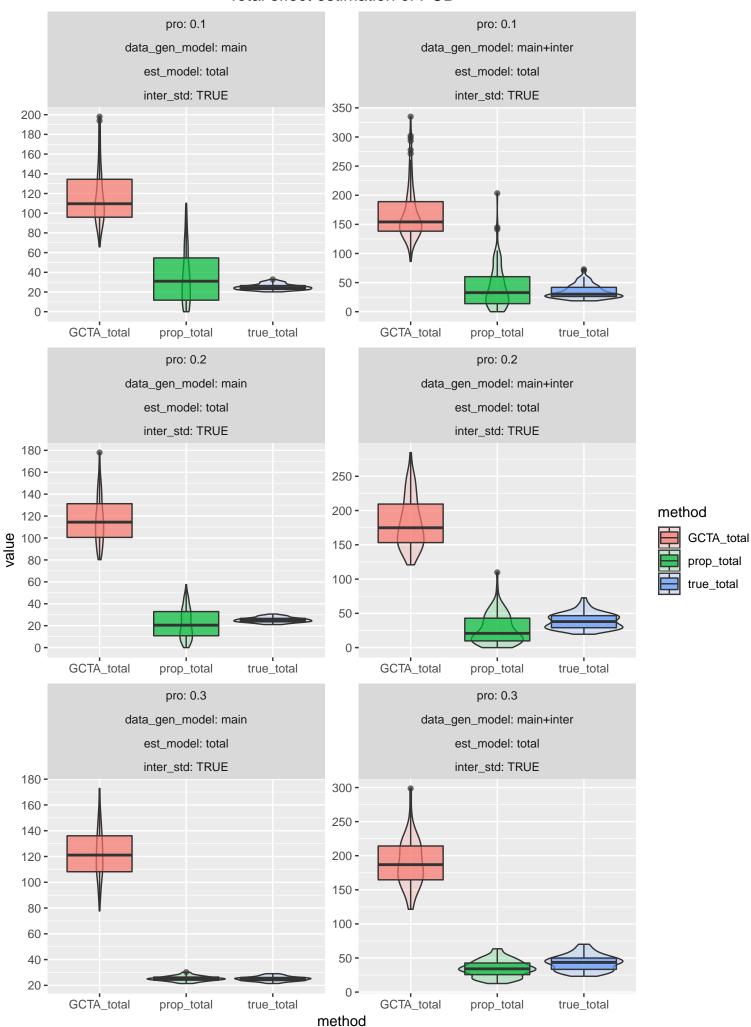
GCTA\_intermanctiontenanceiometeraction GCTA\_intermanctiontenanceiometeraction GCTA\_intermanctiontenanceiometeraction GCTA\_intermanction method

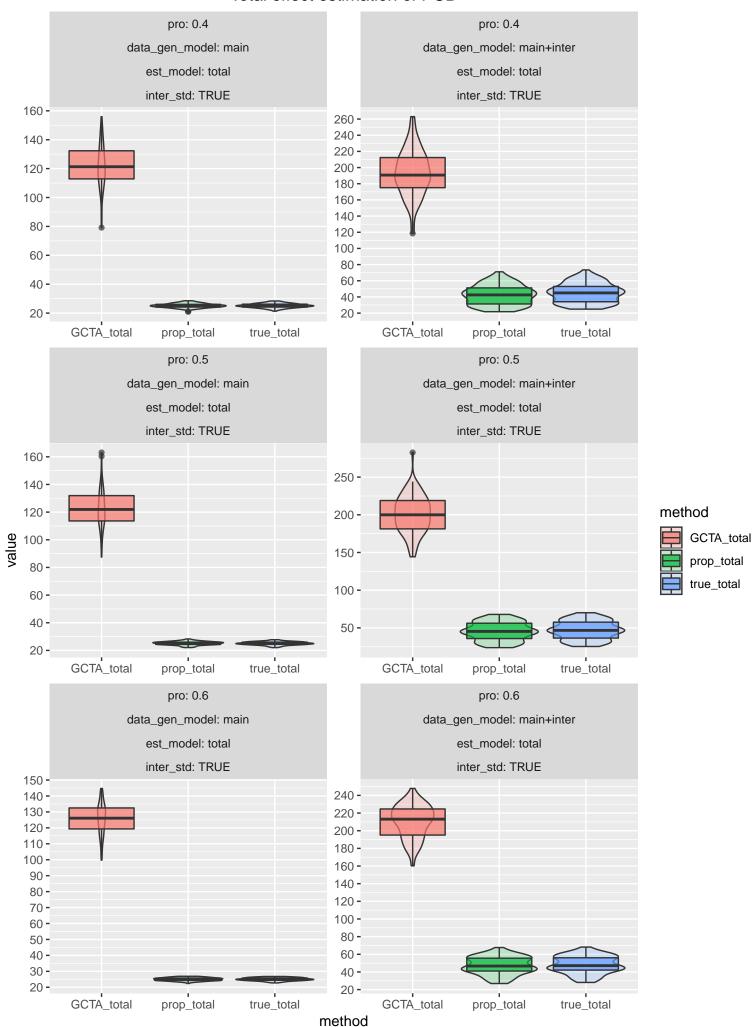
# main effect estimation of PCB



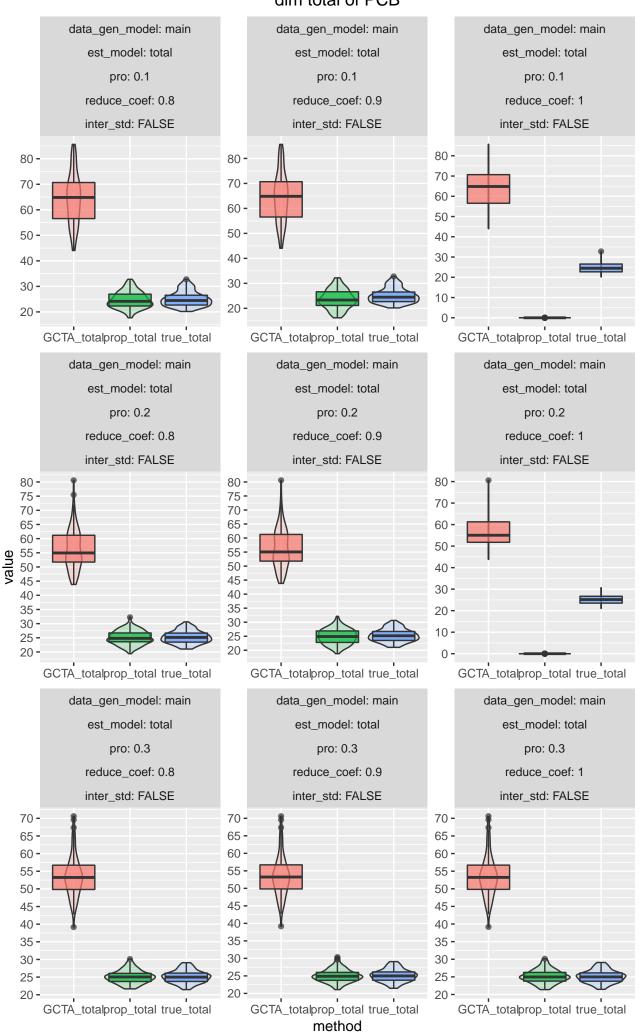








### dim total of PCB



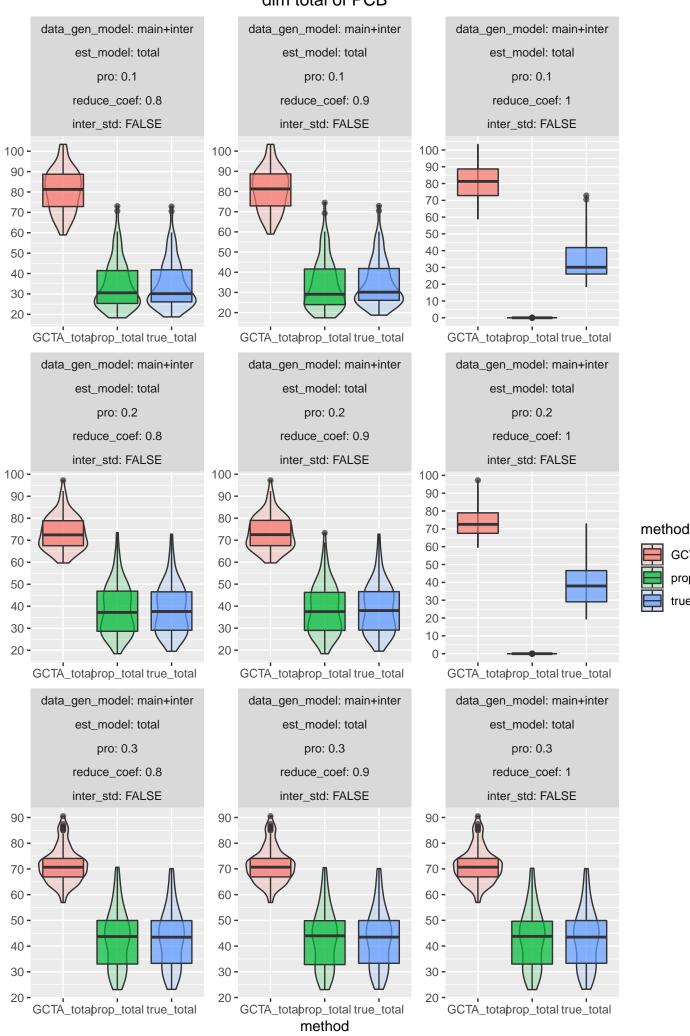
method

GCTA\_total

prop\_total

true\_total

# dim total of PCB



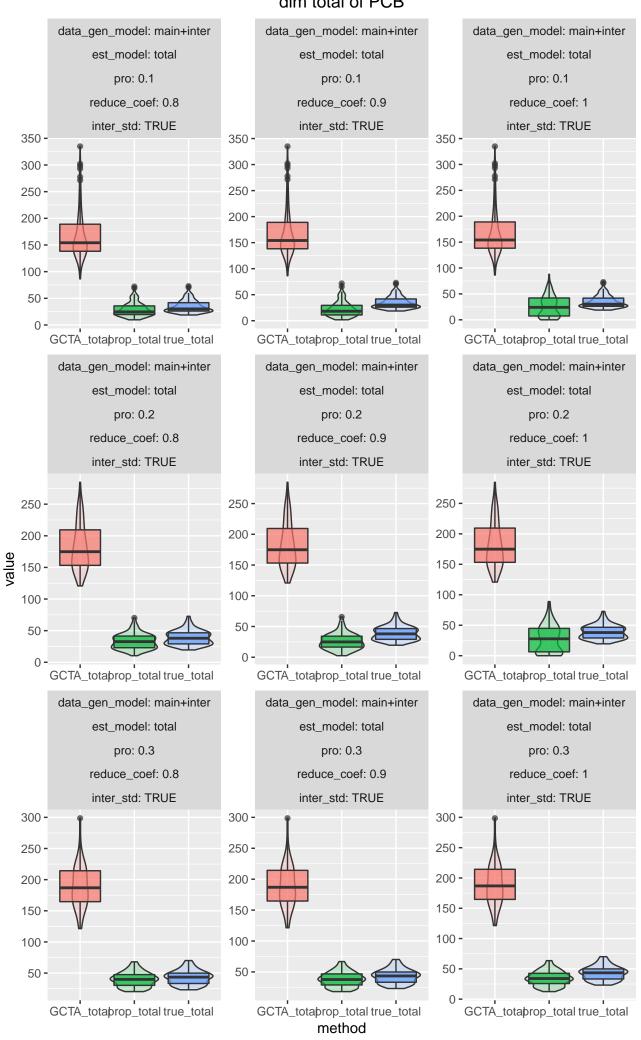
GCTA\_total

prop\_total

true\_total

value

# dim total of PCB



method

GCTA\_total

prop\_total

true\_total