Supplementary Table 1: All overlap results for each scenario of *µ* for the four DMR finding methods in the simulation study.

For *µ=0 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 0 | 0 | 0 |
| bumphunter | 0 | 0 | 0 | 0 |
| probelasso | 0 | 0 | 0 | 0 |
| comb-p | 0 | 0 | 0 | 0 |

For *µ=0 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 0 | 0 | 0 |
| bumphunter | 0 | 0 | 0 | 0 |
| probelasso | 0 | 0 | 0 | 0 |
| comb-p | 0 | 0 | 0 | 0 |

For *µ=0 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 0 | 0 | 0 |
| bumphunter | 0 | 0 | 0 | 0 |
| probelasso | 0 | 0 | 0 | 0 |
| comb-p | 0 | 0 | 0 | 0 |

For *µ=0 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 0 | 0 | 0 |
| bumphunter | 0 | 0 | 0 | 0 |
| probelasso | 0 | 0 | 0 | 0 |
| comb-p | 0 | 0 | 0 | 0 |

For *µ=0 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 0 | 0 | 0 |
| bumphunter | 0 | 0 | 0 | 0 |
| probelasso | 0 | 0 | 0 | 0 |
| comb-p | 0 | 0 | 0 | 0 |

*For µ=0.025 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *8* | *0* | *9* |
| *bumphunter* | *9* | *0* | *0* | *22* |
| *probelasso* | *0* | *0* | *0* | *0* |
| *comb-p* | *9* | *19* | *0* | *0* |

*For µ=0.025 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *7* | *0* | *7* |
| *bumphunter* | *8* | *0* | *0* | *29* |
| *probelasso* | *0* | *0* | *0* | *0* |
| *comb-p* | *7* | *27* | *0* | *0* |

*For µ=0.025 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *6* | *0* | *5* |
| *bumphunter* | *9* | *0* | *0* | *24* |
| *probelasso* | *0* | *0* | *0* | *0* |
| *comb-p* | *5* | *17* | *0* | *0* |

*For µ=0.025 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *6* | *0* | *3* |
| *bumphunter* | *7* | *0* | *0* | *24* |
| *probelasso* | *0* | *0* | *0* | *0* |
| *comb-p* | *3* | *17* | *0* | *0* |

*For µ=0.025 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *3* | *0* | *4* |
| *bumphunter* | *3* | *0* | *0* | *24* |
| *probelasso* | *0* | *0* | *0* | *0* |
| *comb-p* | *4* | *20* | *0* | *0* |

*For µ=0.05 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 91 | 41 | 75 |
| bumphunter | 148 | 0 | 120 | 196 |
| probelasso | 41 | 80 | 0 | 78 |
| comb-p | 75 | 122 | 78 | 0 |

*For µ=0.05 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *94* | *36* | *82* |
| *bumphunter* | *130* | *0* | *96* | *195* |
| *probelasso* | *37* | *70* | *0* | *67* |
| *comb-p* | *84* | *137* | *66* | *0* |

*For µ=0.05 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *78* | *32* | *68* |
| *bumphunter* | *113* | *0* | *93* | *158* |
| *probelasso* | *32* | *62* | *0* | *61* |
| *comb-p* | *73* | *111* | *62* | *0* |

*For µ=0.05 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 71 | 30 | 65 |
| bumphunter | 104 | 0 | 81 | 156 |
| probelasso | 30 | 63 | 0 | 59 |
| comb-p | 68 | 116 | 59 | 0 |

*For µ=0.05 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 72 | 29 | 60 |
| bumphunter | 103 | 0 | 90 | 166 |
| probelasso | 31 | 64 | 0 | 67 |
| comb-p | 62 | 116 | 67 | 0 |

*For µ=0.1 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 186 | 96 | 164 |
| bumphunter | 296 | 0 | 284 | 394 |
| probelasso | 97 | 185 | 0 | 164 |
| comb-p | 164 | 257 | 164 | 0 |

*For µ=0.1 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 174 | 89 | 150 |
| bumphunter | 275 | 0 | 246 | 343 |
| probelasso | 92 | 168 | 0 | 138 |
| comb-p | 153 | 226 | 138 | 0 |

*For µ=0.1 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 168 | 87 | 145 |
| bumphunter | 260 | 0 | 227 | 306 |
| probelasso | 88 | 152 | 0 | 136 |
| comb-p | 150 | 207 | 139 | 0 |

*For µ=0.1 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 161 | 87 | 155 |
| bumphunter | 239 | 0 | 232 | 319 |
| probelasso | 90 | 169 | 0 | 146 |
| comb-p | 156 | 226 | 145 | 0 |

*For µ=0.1 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 173 | 87 | 151 |
| bumphunter | 262 | 0 | 238 | 328 |
| probelasso | 87 | 160 | 0 | 140 |
| comb-p | 153 | 227 | 141 | 0 |

*For µ=0.15 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *220* | *124* | *196* |
| *bumphunter* | *354* | *0* | *338* | *458* |
| *probelasso* | *125* | *223* | *0* | *198* |
| *comb-p* | *197* | *301* | *200* | *0* |

*For µ=0.15 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *204* | *107* | *183* |
| *bumphunter* | *325* | *0* | *308* | *411* |
| *probelasso* | *110* | *210* | *0* | *181* |
| *comb-p* | *189* | *281* | *182* | *0* |

*For µ=0.15 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *216* | *117* | *193* |
| *bumphunter* | *333* | *0* | *282* | *380* |
| *probelasso* | *120* | *186* | *0* | *162* |
| *comb-p* | *199* | *260* | *165* | *0* |

*For µ=0.15 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *208* | *117* | *192* |
| *bumphunter* | *307* | *0* | *288* | *386* |
| *probelasso* | *120* | *208* | *0* | *185* |
| *comb-p* | *196* | *281* | *185* | *0* |

*For µ=0.15 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *221* | *111* | *192* |
| *bumphunter* | *345* | *0* | *299* | *400* |
| *probelasso* | *111* | *202* | *0* | *176* |
| *comb-p* | *195* | *276* | *178* | *0* |

*For µ=0.2 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 230 | 132 | 207 |
| bumphunter | 380 | 0 | 362 | 495 |
| probelasso | 134 | 235 | 0 | 208 |
| comb-p | 209 | 325 | 209 | 0 |

*For µ=0.2 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 229 | 129 | 208 |
| bumphunter | 364 | 0 | 334 | 455 |
| probelasso | 133 | 225 | 0 | 200 |
| comb-p | 215 | 310 | 201 | 0 |

*For µ=0.2 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 240 | 132 | 216 |
| bumphunter | 369 | 0 | 300 | 427 |
| probelasso | 135 | 193 | 0 | 174 |
| comb-p | 222 | 291 | 176 | 0 |

*For µ=0.2 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 229 | 129 | 207 |
| bumphunter | 335 | 0 | 311 | 438 |
| probelasso | 132 | 221 | 0 | 199 |
| comb-p | 210 | 314 | 198 | 0 |

*For µ=0.2 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 238 | 129 | 207 |
| bumphunter | 376 | 0 | 328 | 441 |
| probelasso | 129 | 212 | 0 | 184 |
| comb-p | 210 | 301 | 187 | 0 |

*For µ=0.3 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 314 | 172 | 271 |
| bumphunter | 514 | 0 | 391 | 551 |
| probelasso | 174 | 243 | 0 | 220 |
| comb-p | 274 | 351 | 221 | 0 |

*For µ=0.3 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 318 | 172 | 282 |
| bumphunter | 488 | 0 | 354 | 510 |
| probelasso | 176 | 232 | 0 | 213 |
| comb-p | 288 | 340 | 213 | 0 |

*For µ=0.3 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 312 | 159 | 271 |
| bumphunter | 473 | 0 | 321 | 470 |
| probelasso | 162 | 203 | 0 | 185 |
| comb-p | 276 | 318 | 187 | 0 |

*For µ=0.3 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 309 | 170 | 275 |
| bumphunter | 456 | 0 | 337 | 494 |
| probelasso | 172 | 229 | 0 | 213 |
| comb-p | 278 | 343 | 212 | 0 |

*For µ=0.3 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 321 | 165 | 273 |
| bumphunter | 487 | 0 | 353 | 498 |
| probelasso | 165 | 220 | 0 | 193 |
| comb-p | 275 | 332 | 197 | 0 |

*For µ=0.4 and repetition=1:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *374* | *201* | *307* |
| *bumphunter* | *605* | *0* | *405* | *575* |
| *probelasso* | *203* | *245* | *0* | *221* |
| *comb-p* | *310* | *360* | *222* | *0* |

*For µ=0.4 and repetition=2:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 374 | 197 | 320 |
| bumphunter | 584 | 0 | 369 | 539 |
| probelasso | 202 | 235 | 0 | 218 |
| comb-p | 326 | 354 | 217 | 0 |

*For µ=0.4 and repetition=3:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 367 | 179 | 304 |
| bumphunter | 570 | 0 | 341 | 505 |
| probelasso | 182 | 211 | 0 | 189 |
| comb-p | 309 | 330 | 191 | 0 |

*For µ=0.4 and repetition=4:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | dmrcate | bumphunter | probelasso | comb-p |
| dmrcate | 0 | 358 | 191 | 306 |
| bumphunter | 544 | 0 | 362 | 528 |
| probelasso | 193 | 235 | 0 | 221 |
| comb-p | 309 | 355 | 220 | 0 |

*For µ=0.4 and repetition=5:-*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *dmrcate* | *bumphunter* | *probelasso* | *comb-p* |
| *dmrcate* | *0* | *366* | *188* | *308* |
| *bumphunter* | *558* | *0* | *369* | *525* |
| *probelasso* | *189* | *226* | *0* | *201* |
| *comb-p* | *310* | *348* | *204* | *0* |