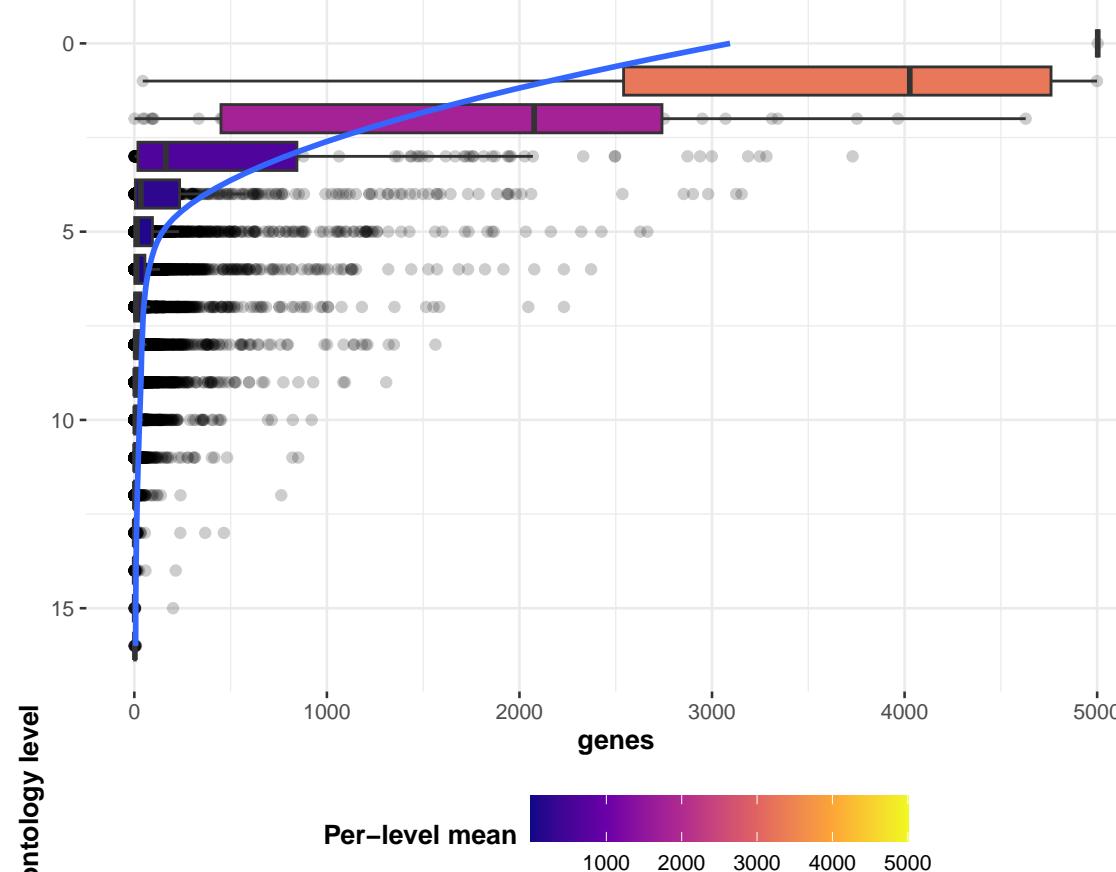


a

### Phenotype level vs. genes

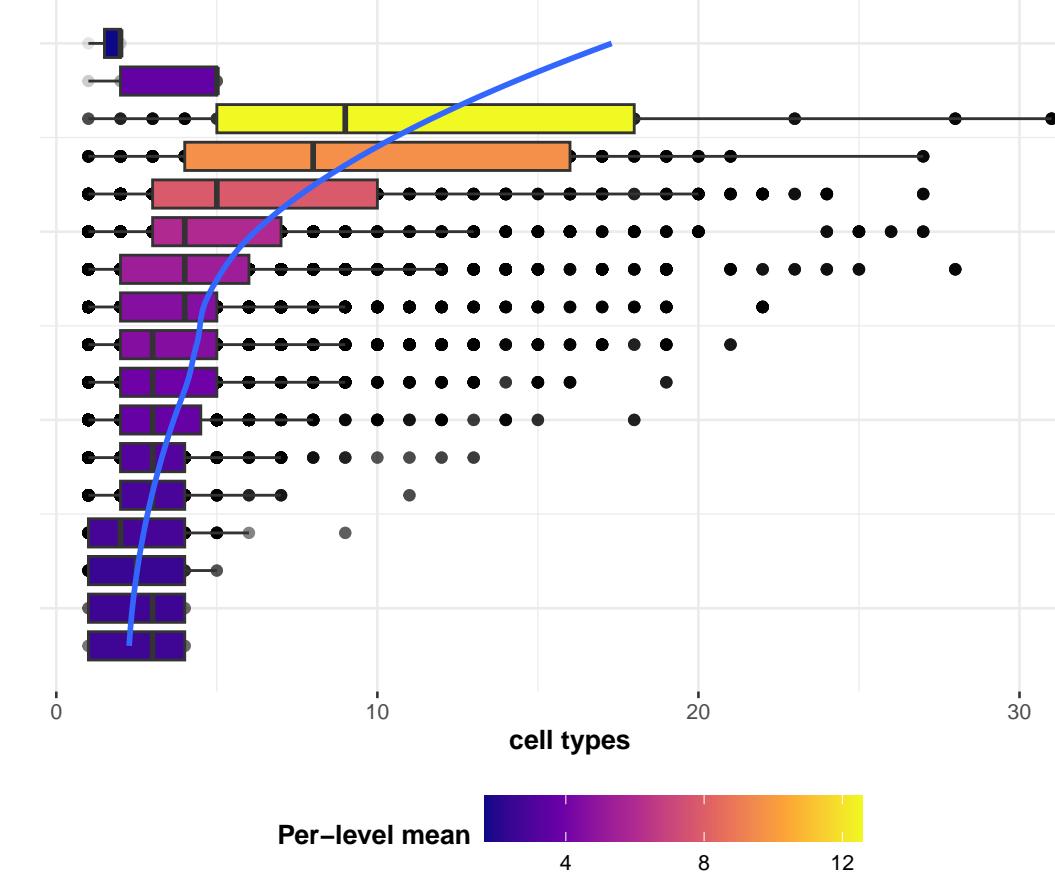
$t_{\text{Student}}(21971) = -40.47, p = 0.00, \hat{r}_{\text{Pearson}} = -0.26, \text{CI}_{95\%} [-0.28, -0.25], n_{\text{pairs}} = 21,973$



b

### Phenotype level vs. cell types (FDR<0.05)

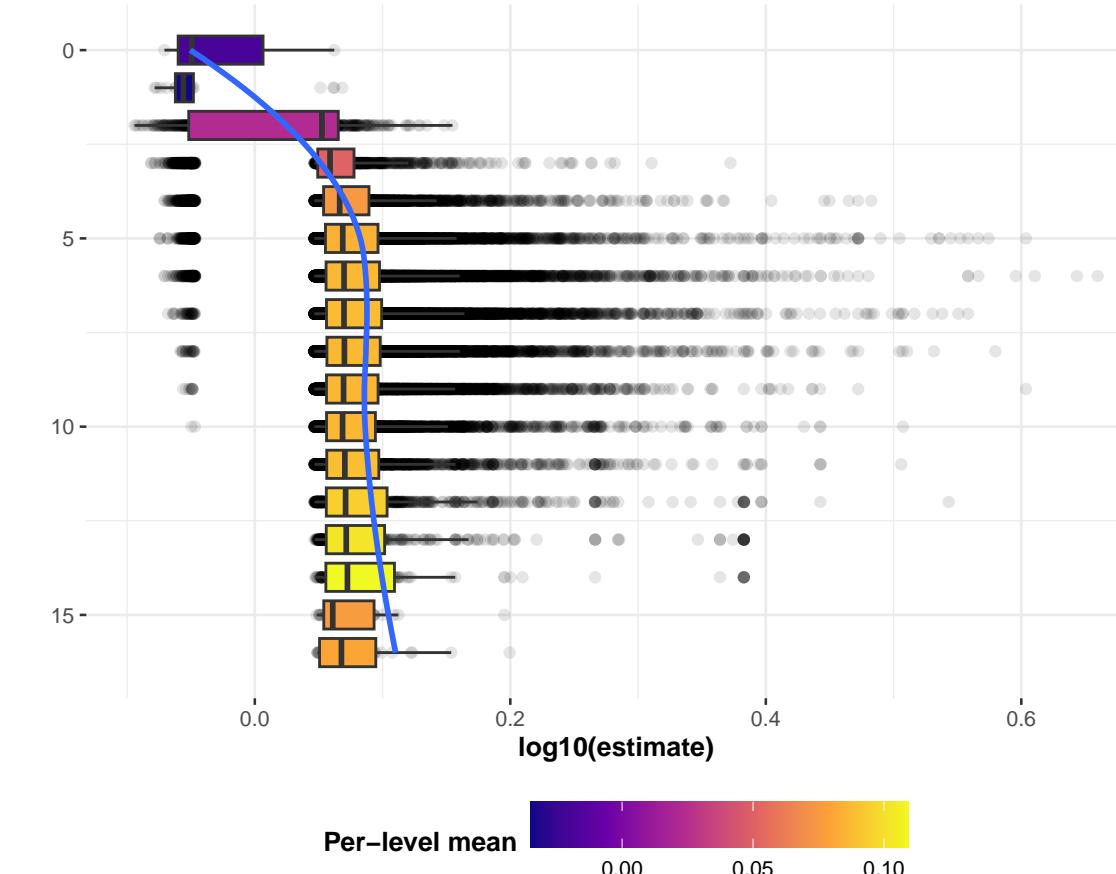
$t_{\text{Student}}(46512) = -66.01, p = 0.00, \hat{r}_{\text{Pearson}} = -0.29, \text{CI}_{95\%} [-0.30, -0.28], n_{\text{pairs}} = 46,514$



c

### Phenotype level vs. estimate (FDR<0.05)

$t_{\text{Student}}(46512) = 20.93, p = 7.30e-97, \hat{r}_{\text{Pearson}} = 0.10, \text{CI}_{95\%} [0.09, 0.11], n_{\text{pairs}} = 46,514$



d

### Phenotype level vs. mean\_specificity (FDR<0.05)

$t_{\text{Student}}(40125) = 28.29, p = 2.71e-174, \hat{r}_{\text{Pearson}} = 0.14, \text{CI}_{95\%} [0.13, 0.15], n_{\text{pairs}} = 40,127$

