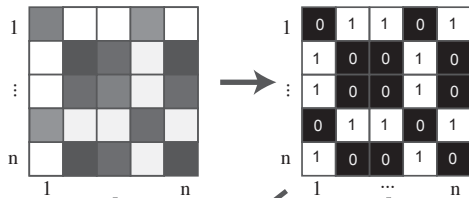


A *Signal Ratio Matrix* $SR_{ij} = |S_i - S_j|$ ($S = \log_2(\text{FPKM} + 1)$) *Differentiation Matrix* $DM_{ij} = (SR_{ij} > th) \& (q_{ij} < 0.05)$

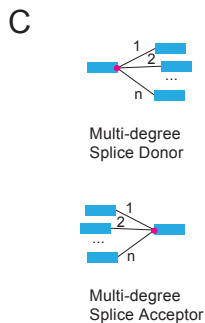


Signal Contrast (SC)

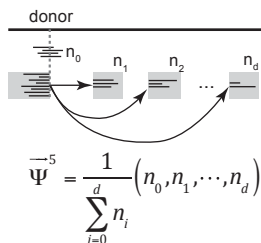
$$SC = \frac{SR_{DM=1}}{SR_{DM=0}}$$

Differentiation Index (DI)

$$DI = \frac{\sum_{i < j} DM_{ij}}{n(n-1)/2}$$

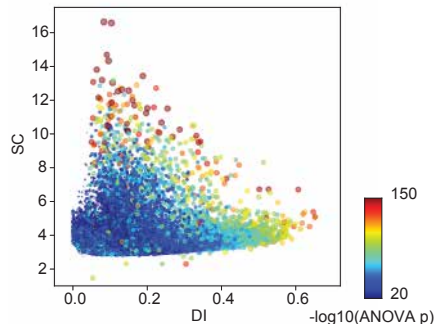


Generalized PSI (branch prob.)



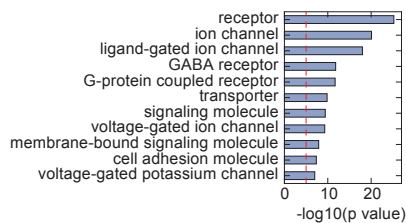
B

DI vs. SC vs. ANOVA



E

Enriched families in top 1000 DI

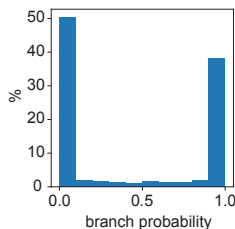


Enriched families in top 1000 SC



D

Branch probability is bimodal



F

Enriched families in top 500 sDN

