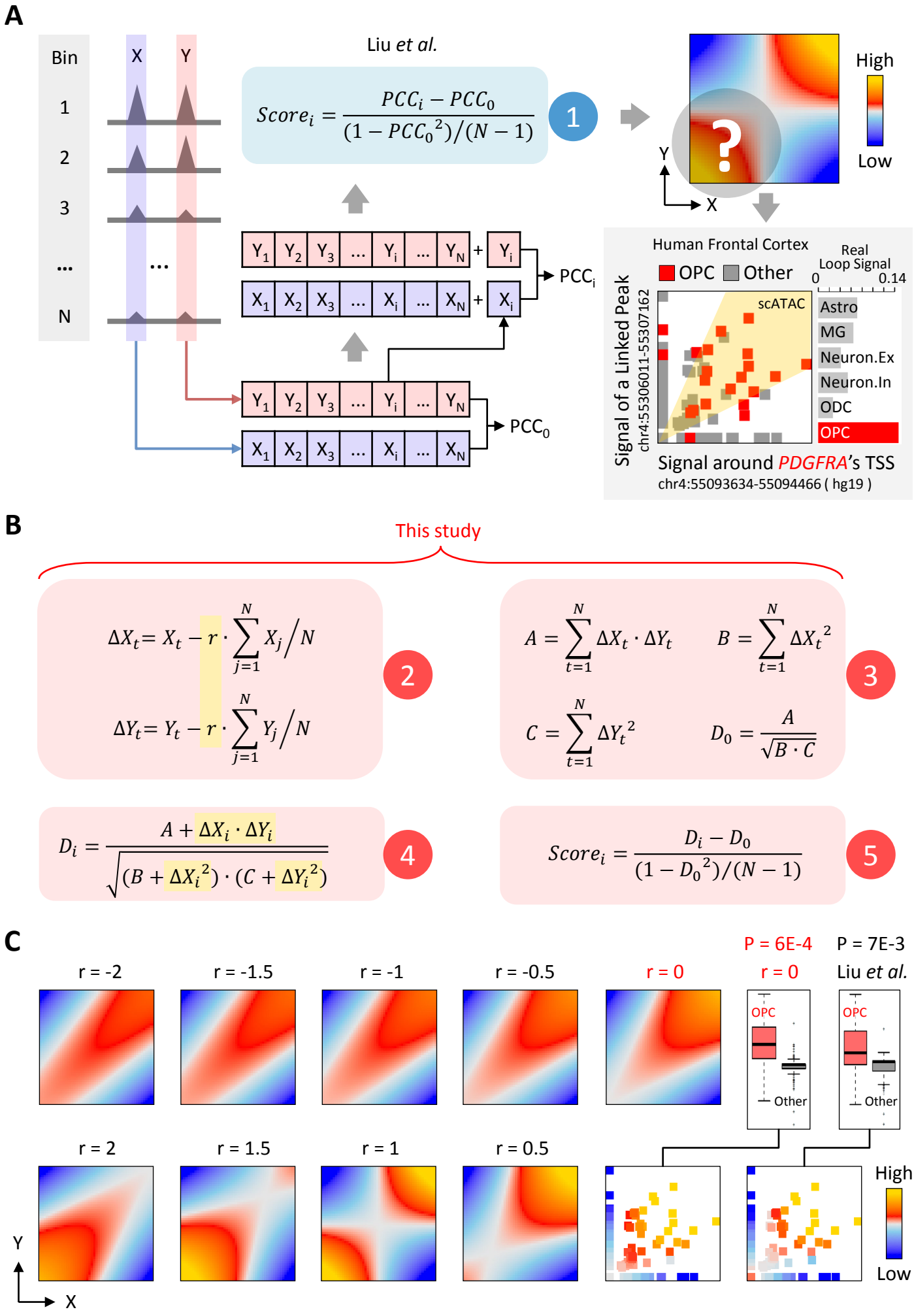
A
Bin
X
Y
1
2
3
...
N
Liu et al.
$Score_i = \frac{PCC_i - PCC_0}{(1 - PCC_0{}^2)/(N-1)}$
1
High
Low
Y
X
Y_1 Y_2 Y_3 ... Y_i ... Y_N + Y_i
X_1 X_2 X_3 ... X_i ... X_N + X_i
PCC_i
PCC_0
Human Frontal Cortex
OPC
Other
Real Loop Signal
0
0.14
scATAC
Astro
MG
Neuron.Ex
Neuron.In
ODC
OPC
Signal of a Linked Peak
chr4:55306011-55307162
Signal around PDGFRA's TSS
chr4:55093634-55094466 (hg19)
B
This study
$\Delta X_t = X_t - r \cdot \sum_{j=1}^{N} X_j / N$
$\Delta Y_t = Y_t - r \cdot \sum_{j=1}^{N} Y_j / N$
2
$A = \sum_{t=1}^{N} \Delta X_t \cdot \Delta Y_t$
$B = \sum_{t=1}^{N} \Delta X_t{}^2$
$C = \sum_{t=1}^{N} \Delta Y_t{}^2$
$D_0 = \frac{A}{\sqrt{B \cdot C}}$
3
$D_i = \frac{A + \Delta X_i \cdot \Delta Y_i}{\sqrt{(B + \Delta X_i{}^2) \cdot (C + \Delta Y_i{}^2)}}$
4
$Score_i = \frac{D_i - D_0}{(1 - D_0{}^2)/(N-1)}$
5
C
r = -2
r = -1.5
r = -1
r = -0.5
r = 0
P = 6E-4
r = 0
P = 7E-3
Liu et al.
OPC
Other
OPC
Other
r = 2
r = 1.5
r = 1
r = 0.5
High
Low
Y
X