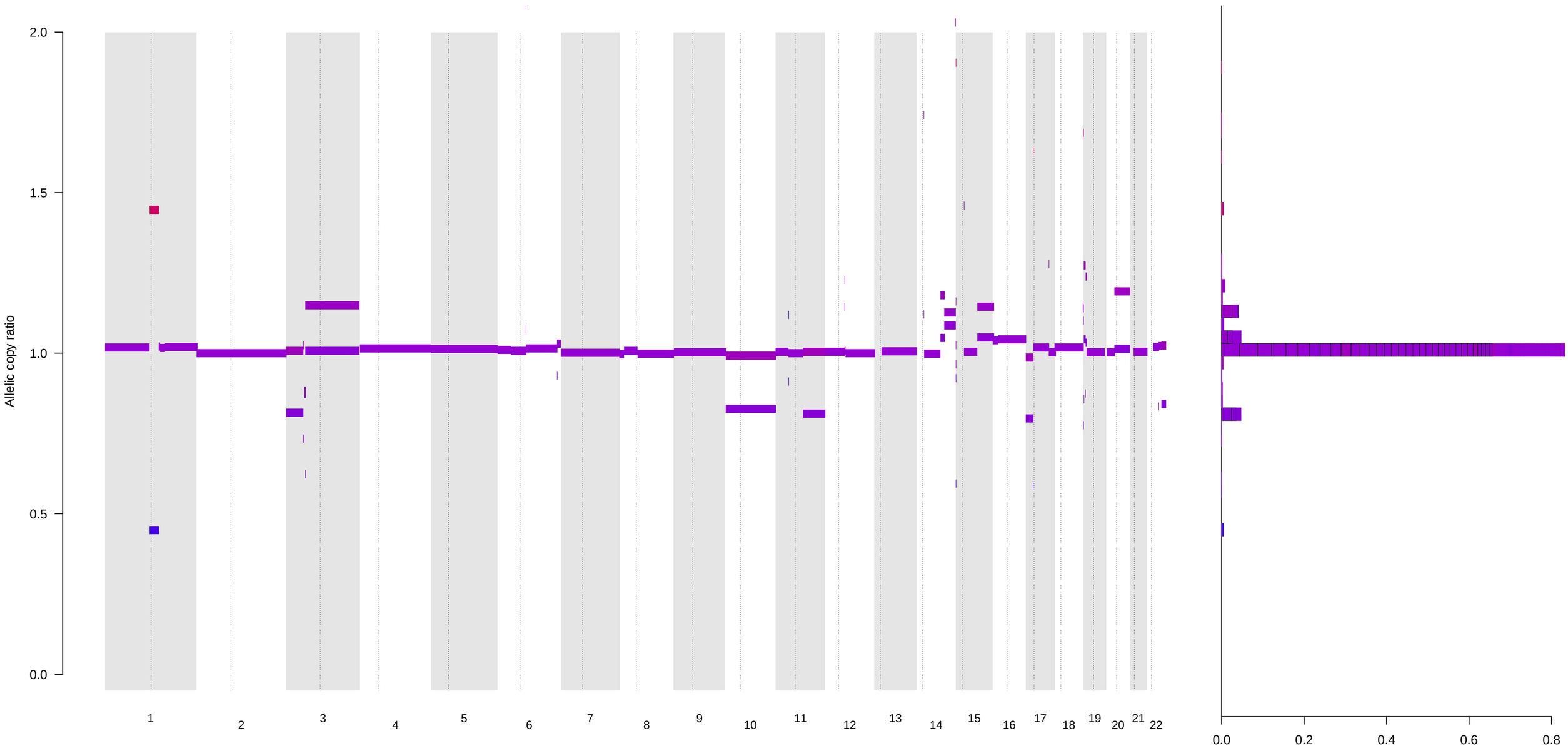
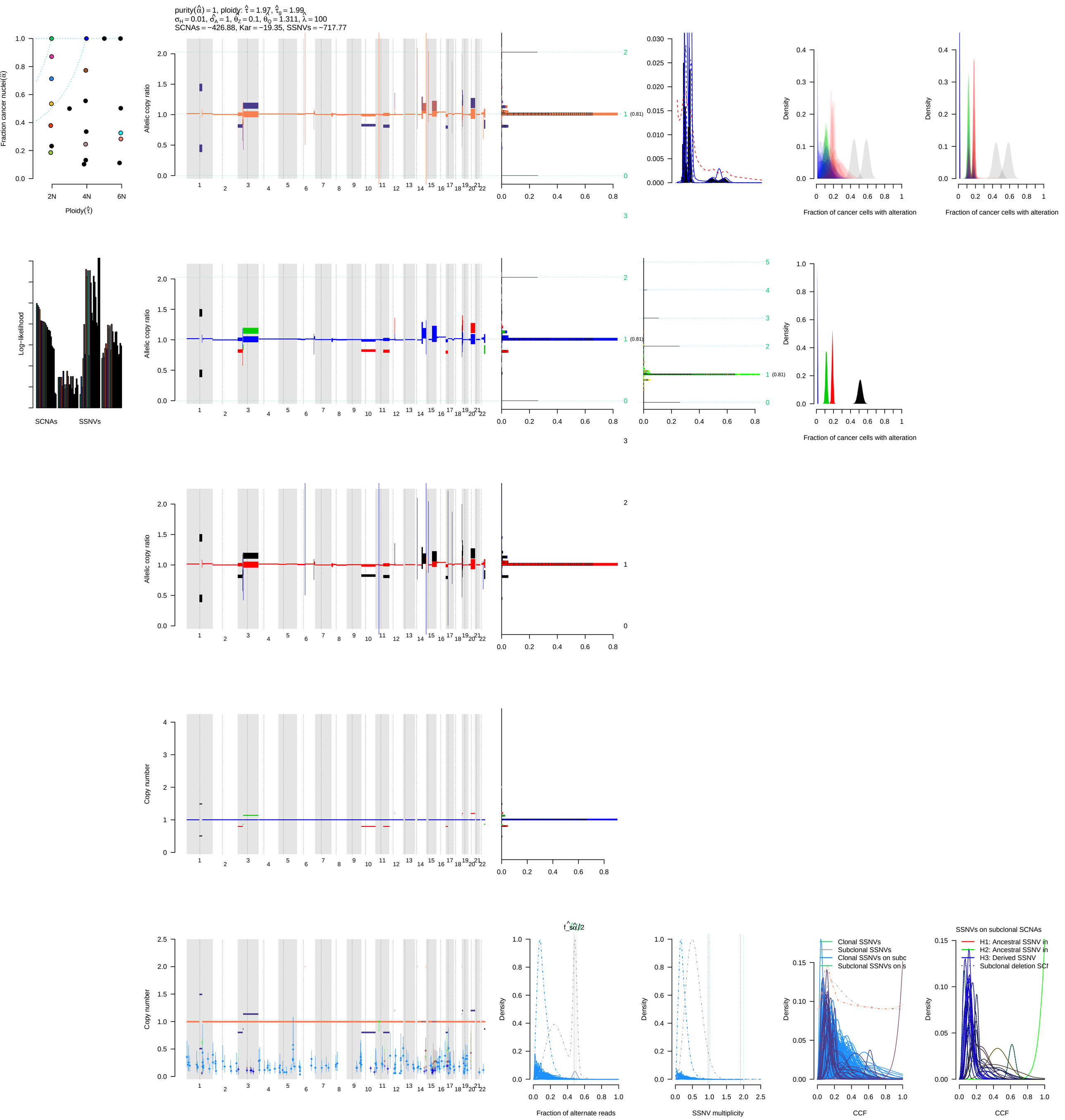
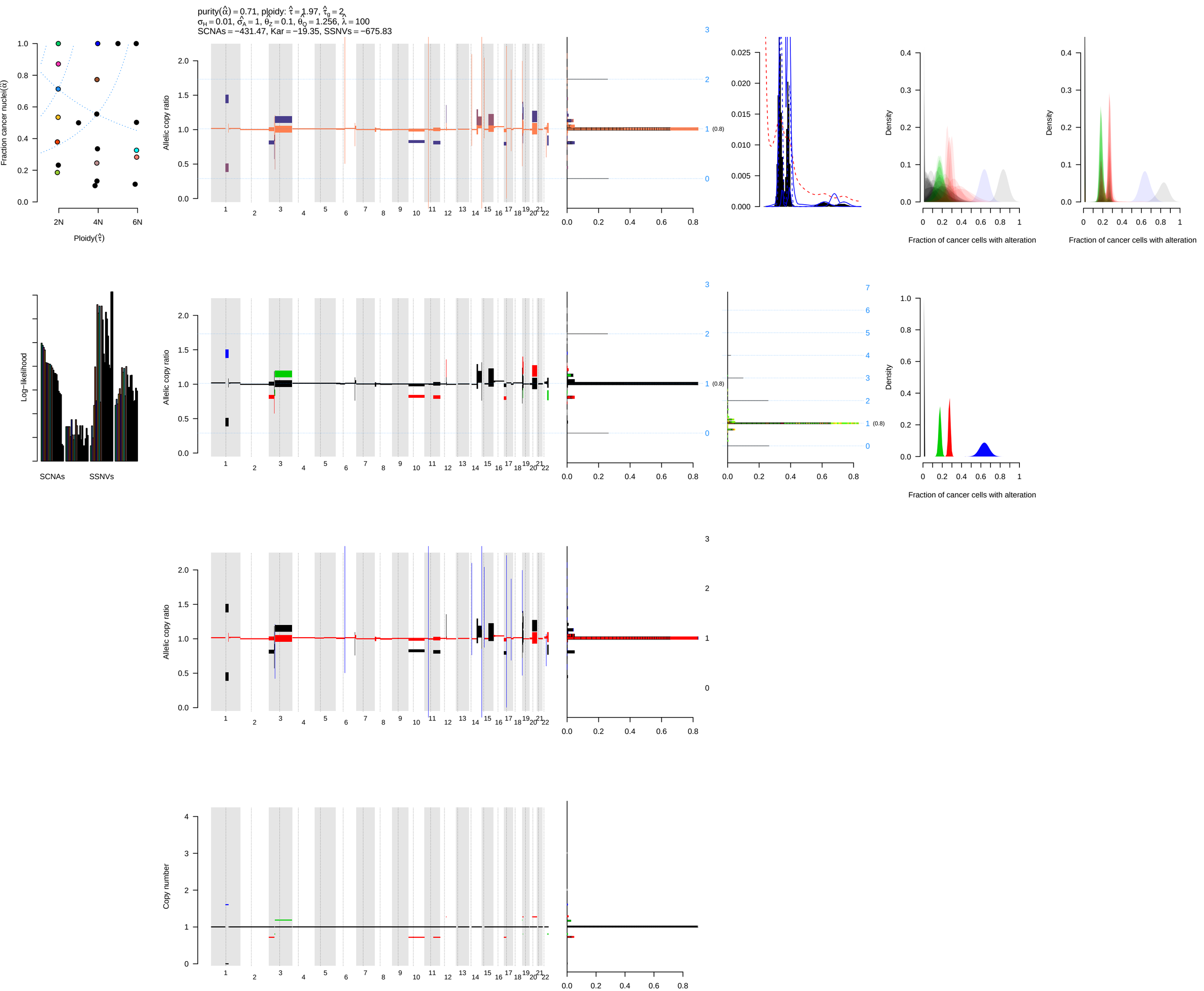
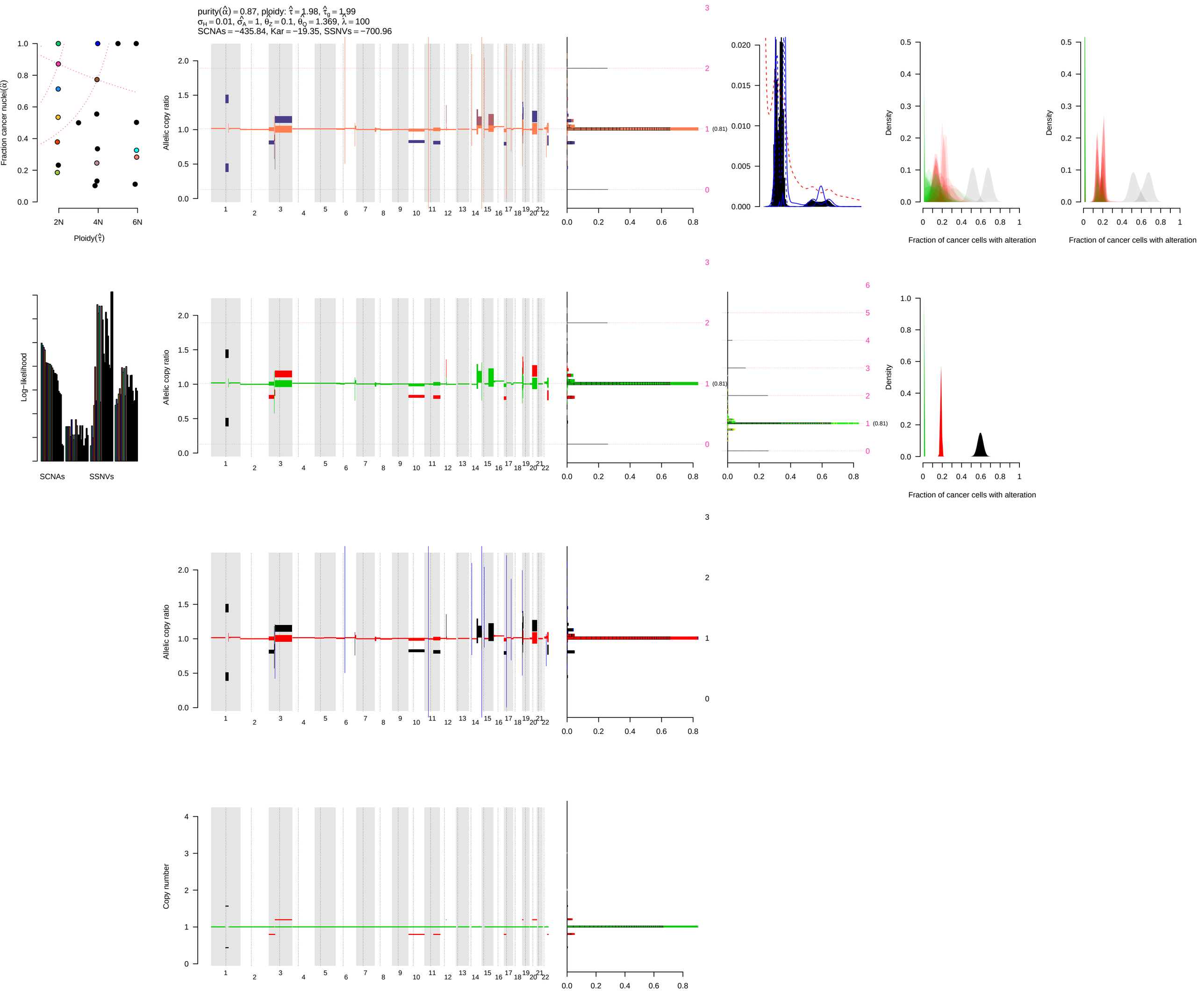
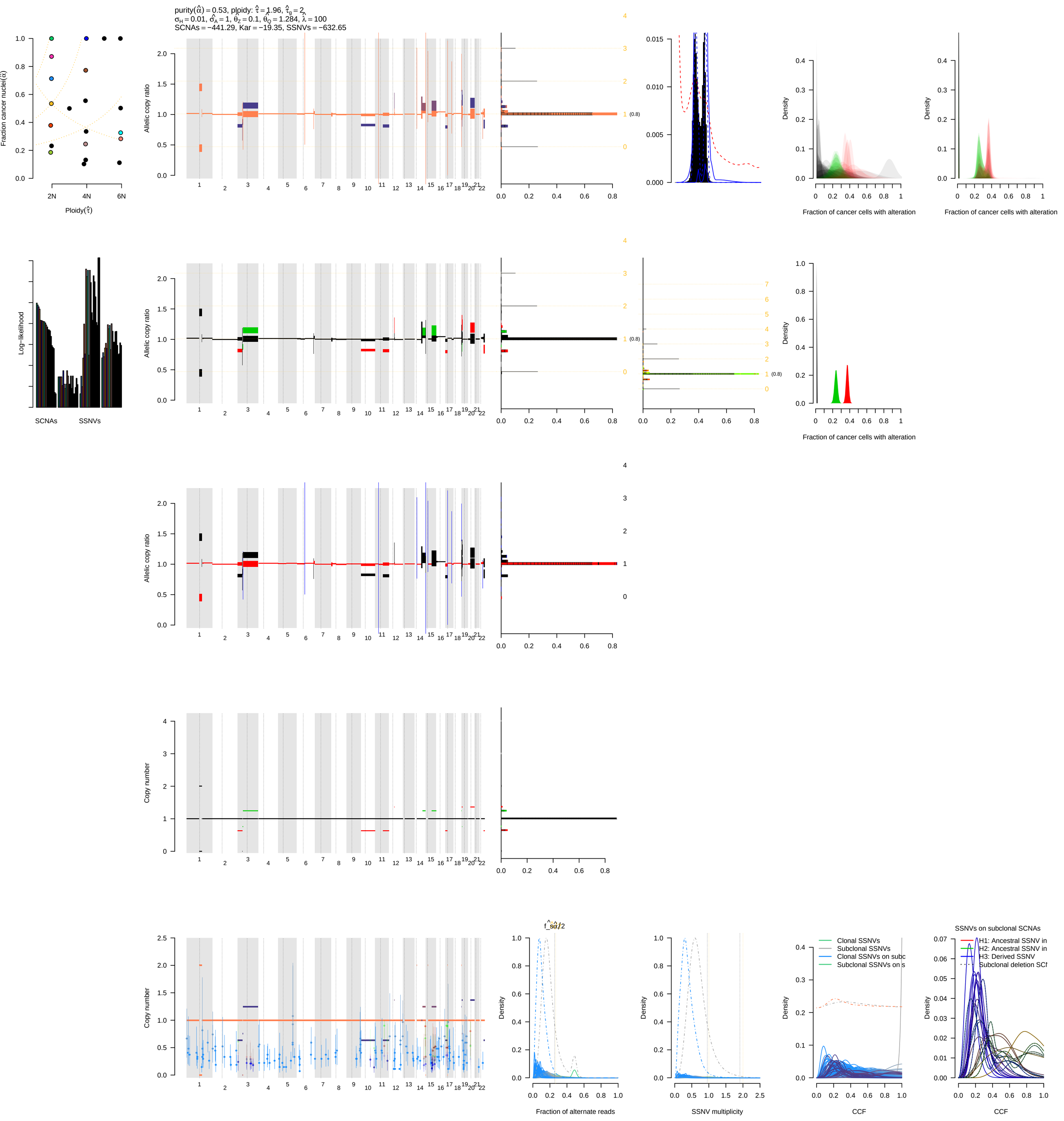
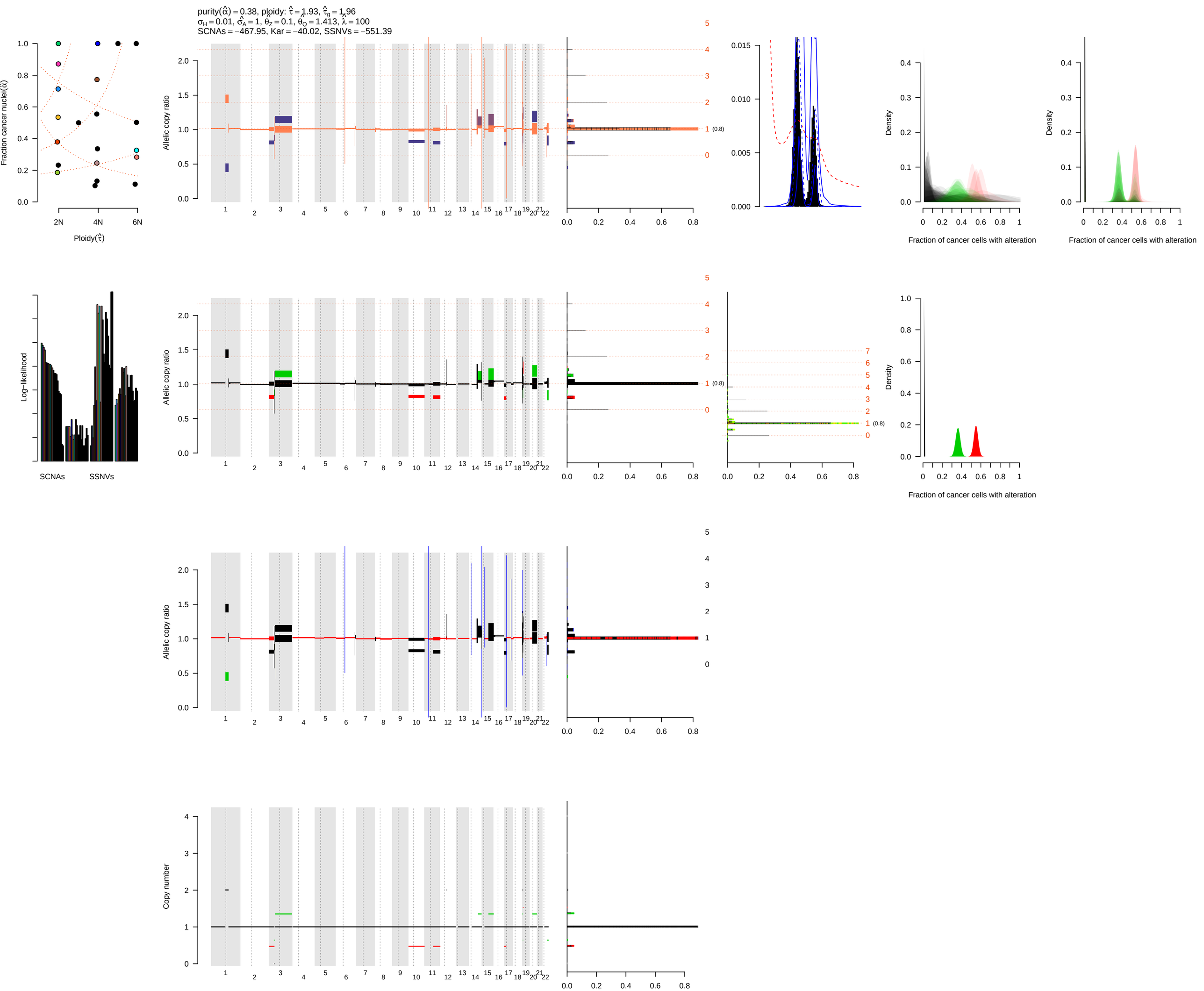

Allelic copy ratio
2.0
1.5
1.0
0.5
0.0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
0.0
0.2
0.4
0.6
0.8

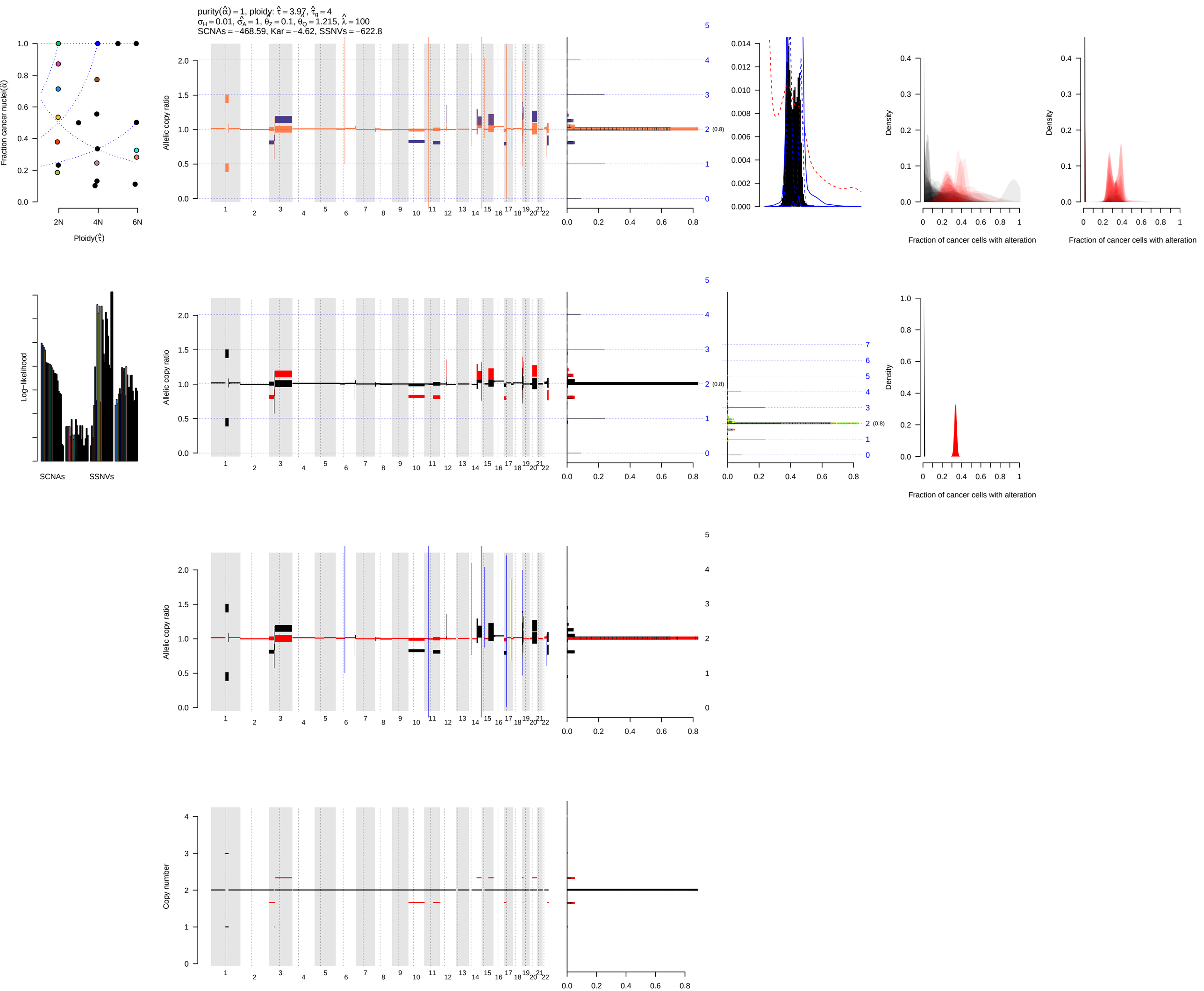

purity($\hat{\alpha}$) = 1, ploidy: $\hat{\tau}$ = 1.97, $\hat{\tau}_g$ = 1.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.311, $\hat{\lambda}$ = 100
SCNAs = −426.88, Kar = −19.35, SSNVs = −717.77
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.81)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sa/2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

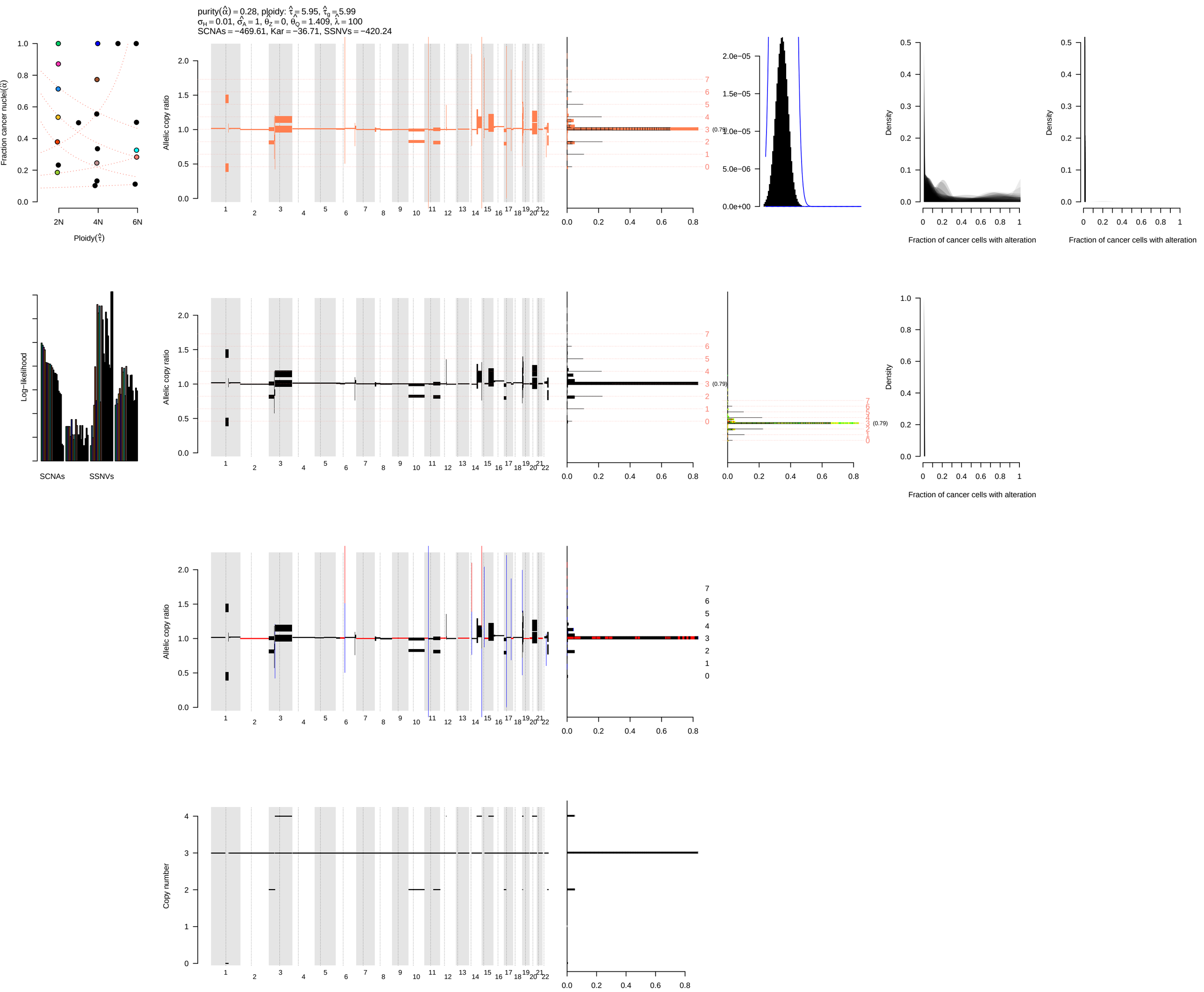

purity($\hat{\alpha}$) = 0.71, ploidy: $\hat{\tau}$ = 1.97, $\hat{\tau}_g$ = 2
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.256, $\hat{\lambda}$ = 100
SCNAs = −431.47, Kar = −19.35, SSNVs = −675.83
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sol/2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

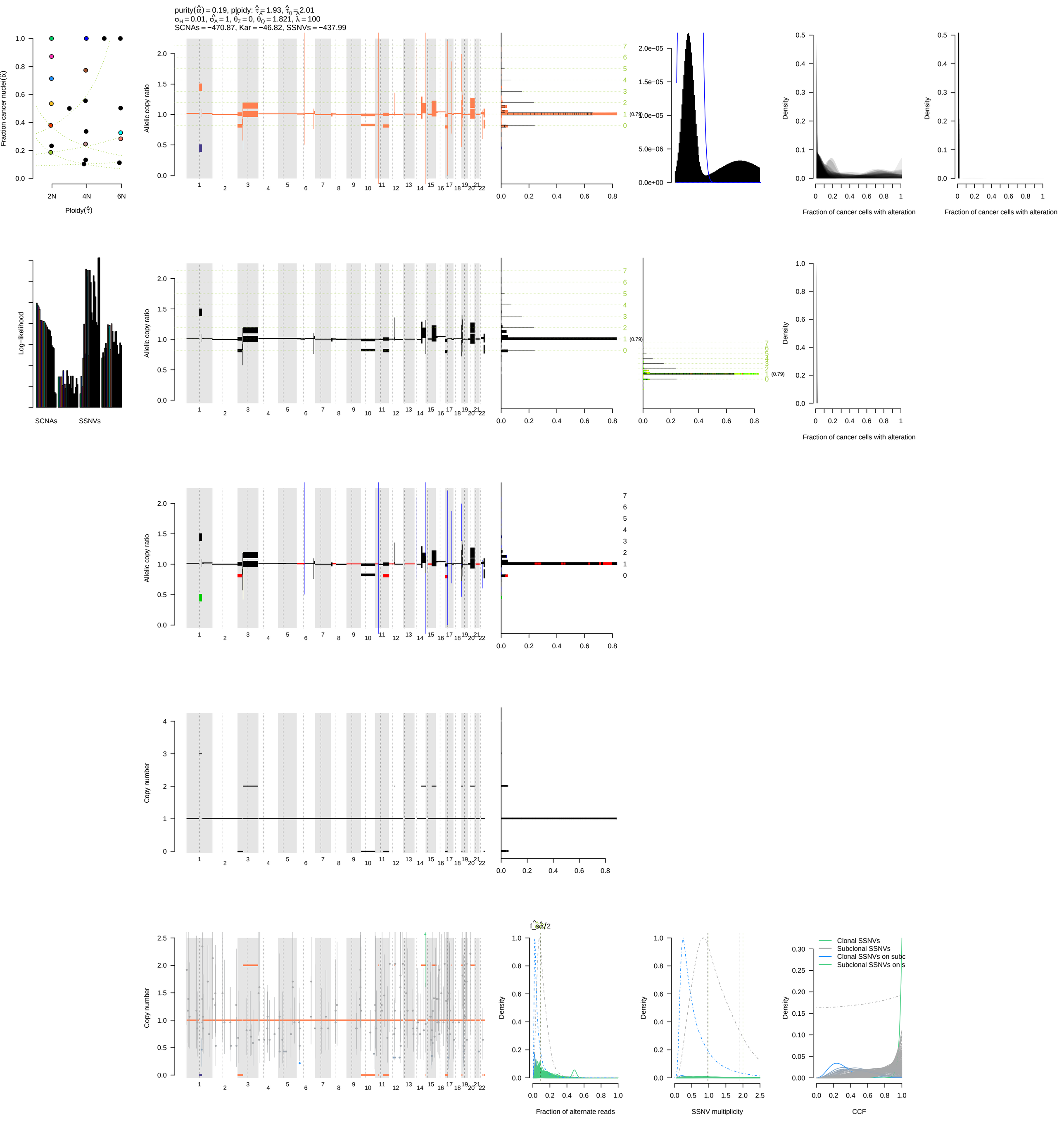

purity($\hat{\alpha}$) = 0.87, ploidy: $\hat{\tau}$ = 1.98, $\hat{\tau}_g$ = 1.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.369, $\hat{\lambda}$ = 100
SCNAs = −435.84, Kar = −19.35, SSNVs = −700.96
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_s
Fraction of alternate reads
SSNV multiplicity
CCF
SSNVs on subclonal SCNAs
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

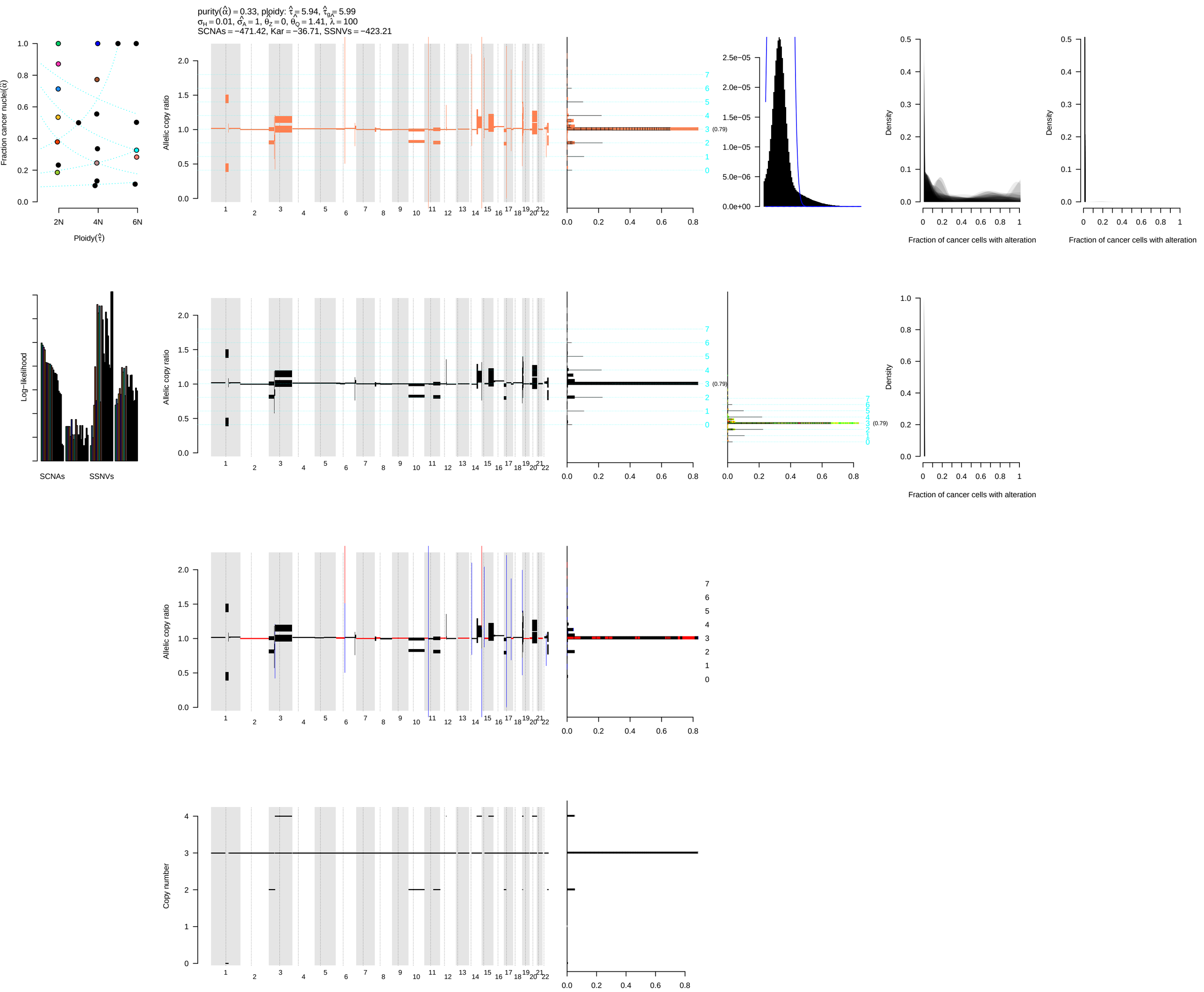

purity($\hat{\alpha}$) = 0.53, ploidy: $\hat{\tau}$ = 1.96, $\hat{\tau}_g$ = 2
σ_H = 0.01, $\hat{\sigma}_A$ = 1, $\hat{\theta}_Z$ = 0.1, $\hat{\theta}_Q$ = 1.284, $\hat{\lambda}$ = 100
SCNAs = −441.29, Kar = −19.35, SSNVs = −632.65
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sc/2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

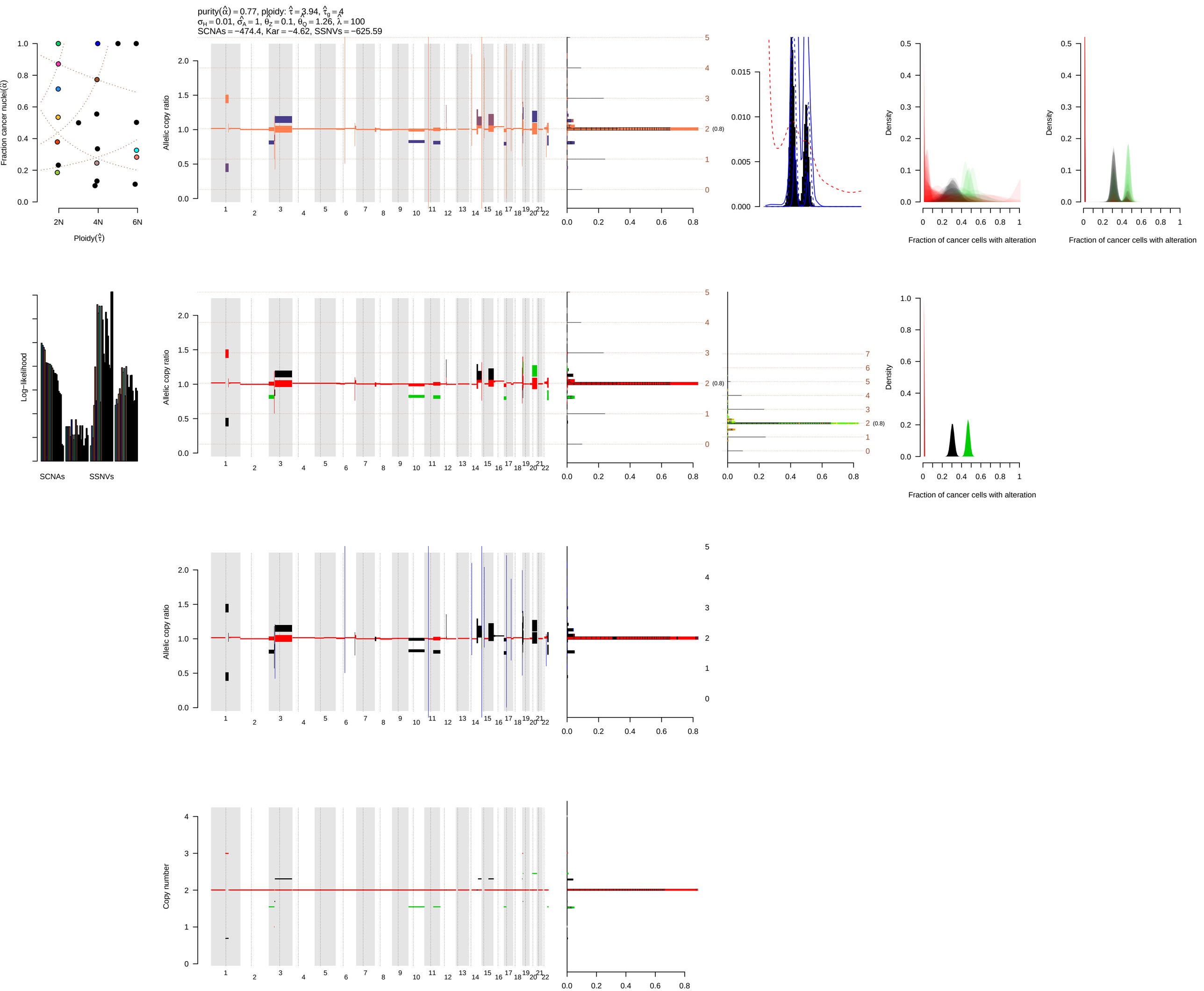

purity($\hat{\alpha}$) = 0.38, ploidy: $\hat{\tau}$ = 1.93, $\hat{\tau}_g$ = 1.96
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.413, $\hat{\lambda}$ = 100
SCNAs = −467.95, Kar = −40.02, SSNVs = −551.39
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sol2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

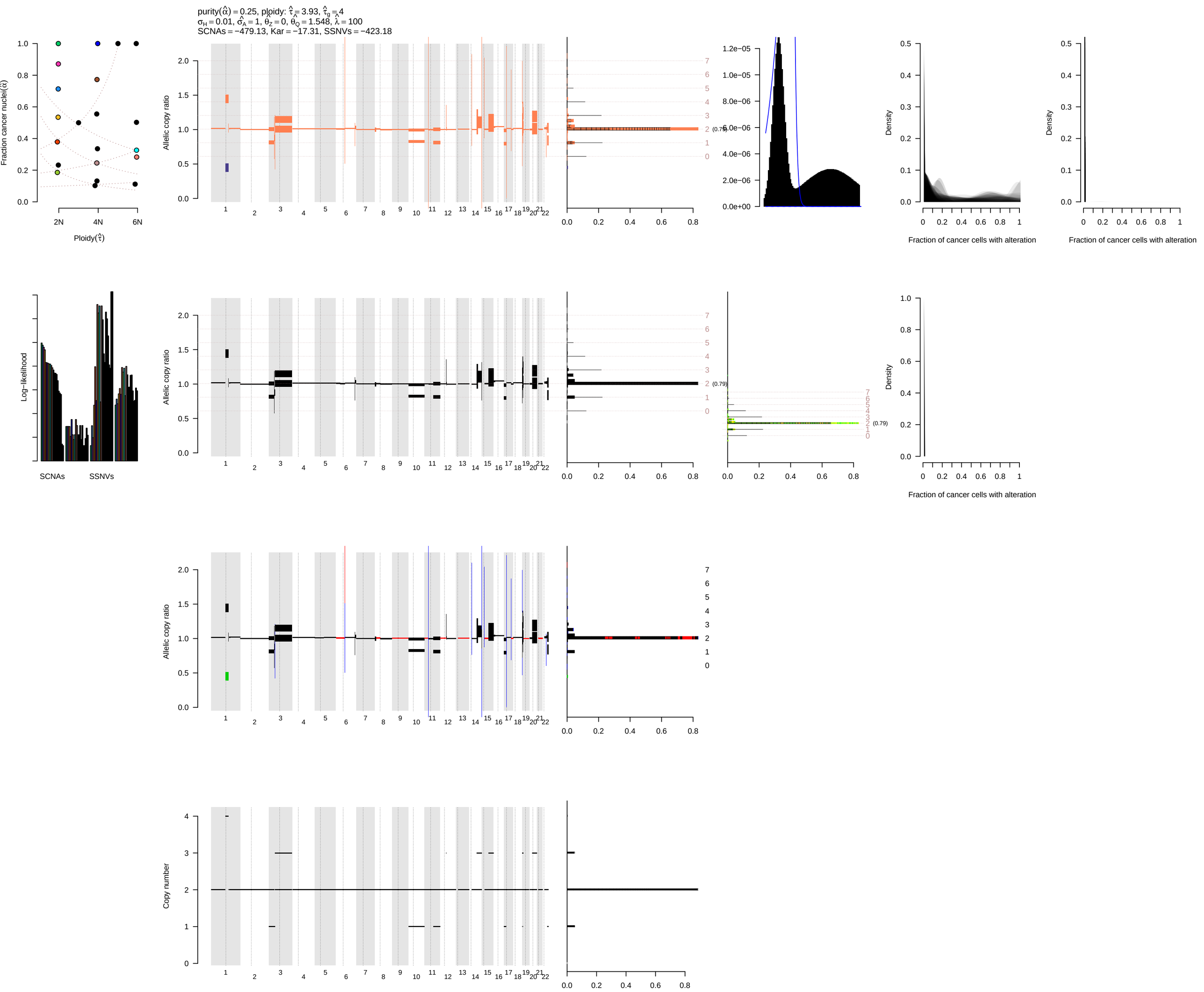

purity($\hat{\alpha}$) = 1, ploidy: $\hat{\tau}$ = 3.97, $\hat{\tau}_g$ = 4
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.215, $\hat{\lambda}$ = 100
SCNAs = −468.59, Kar = −4.62, SSNVs = −622.8
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.8)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sub2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

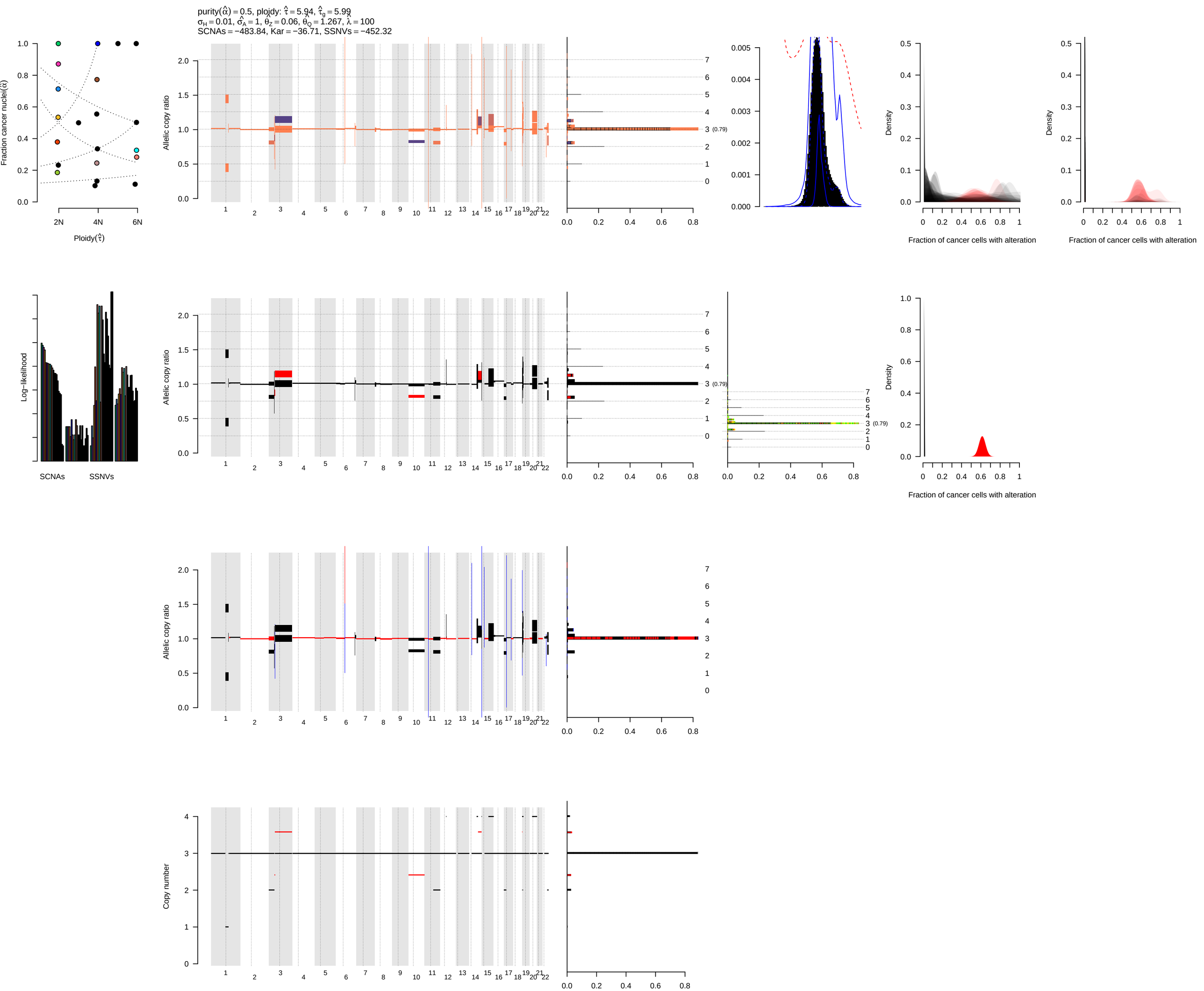

purity($\hat{\alpha}$) = 0.28, ploidy: $\hat{\tau}_A$ = 5.95, $\hat{\tau}_g$ = 5.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0, θ_Q = 1.409, $\hat{\lambda}$ = 100
SCNAs = −469.61, Kar = −36.71, SSNVs = −420.24
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_s$\hat{\alpha}$/2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s

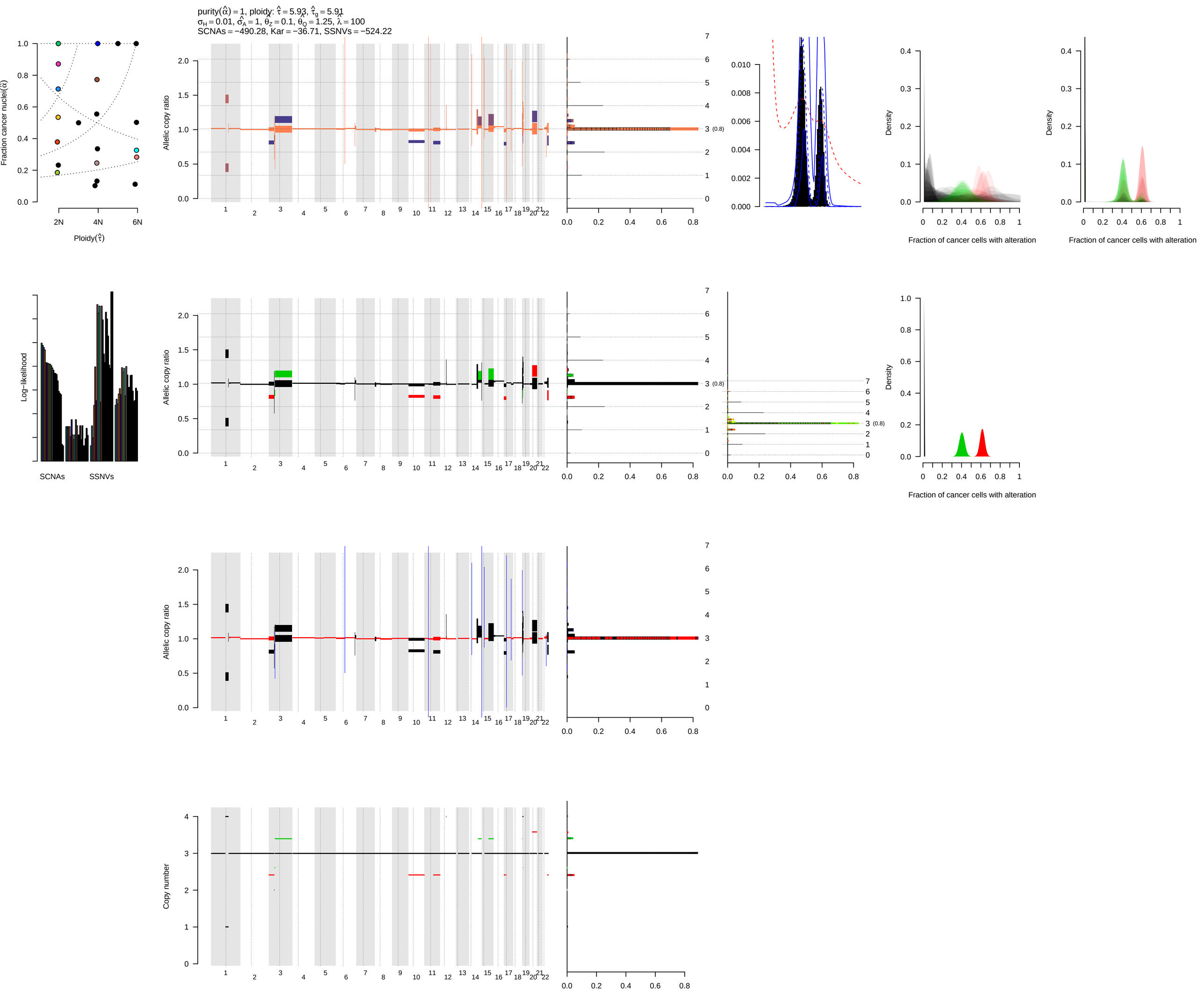

purity($\hat{\alpha}$) = 0.19, ploidy: $\hat{\tau}_A$ = 1.93, $\hat{\tau}_g$ = 2.01
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0, θ_Q = 1.821, $\hat{\lambda}$ = 100
SCNAs = −470.87, Kar = −46.82, SSNVs = −437.99
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.79)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_s
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s

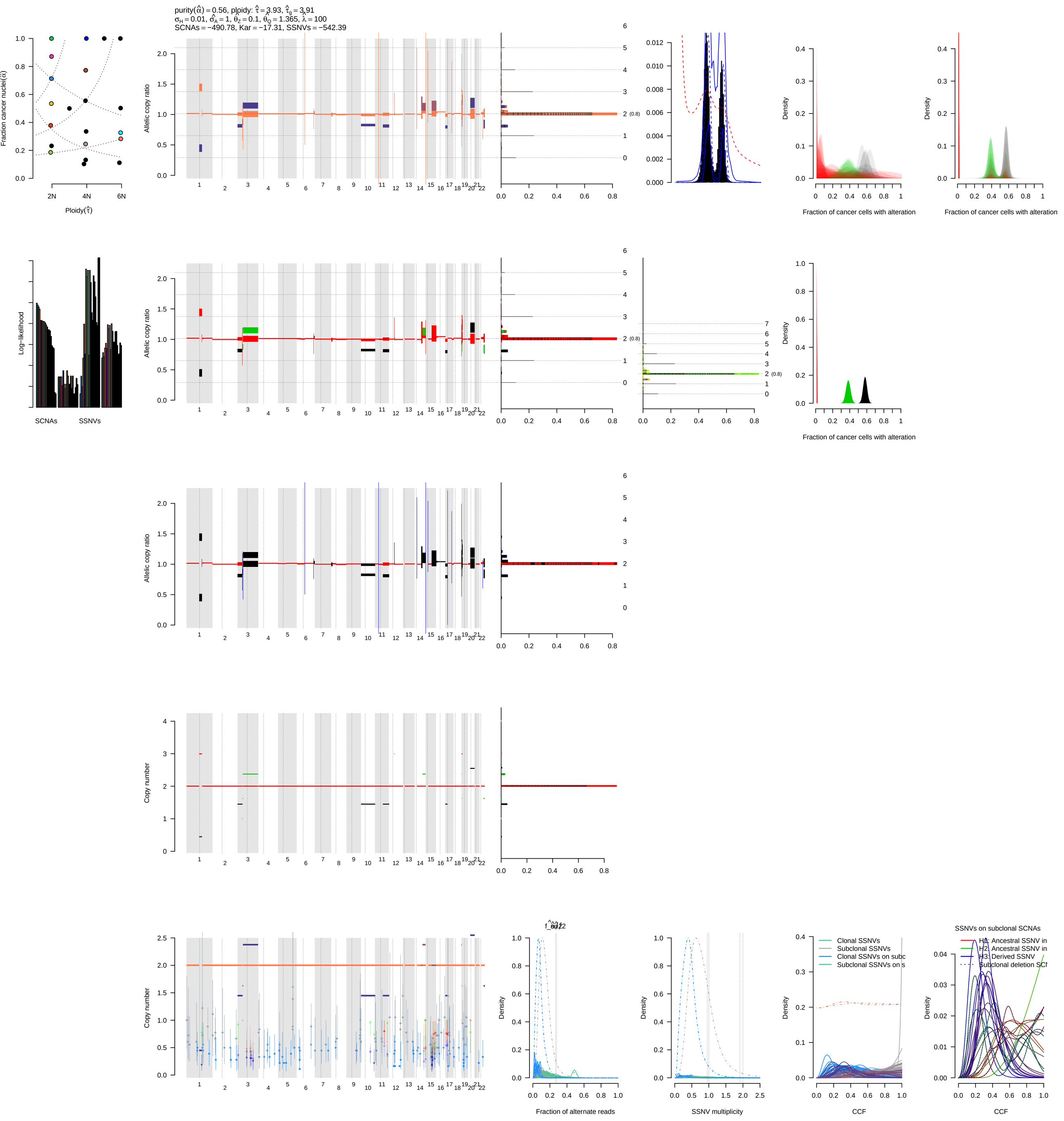

purity($\hat{\alpha}$) = 0.33, ploidy: $\hat{\tau}_{\hat{\lambda}}$ = 5.94, $\hat{\tau}_{g\hat{\lambda}}$ = 5.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0, θ_Q = 1.41, $\hat{\lambda}$ = 100
SCNAs = −471.42, Kar = −36.71, SSNVs = −423.21
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.79)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
$\hat{f}_s\hat{\alpha}/2$
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s

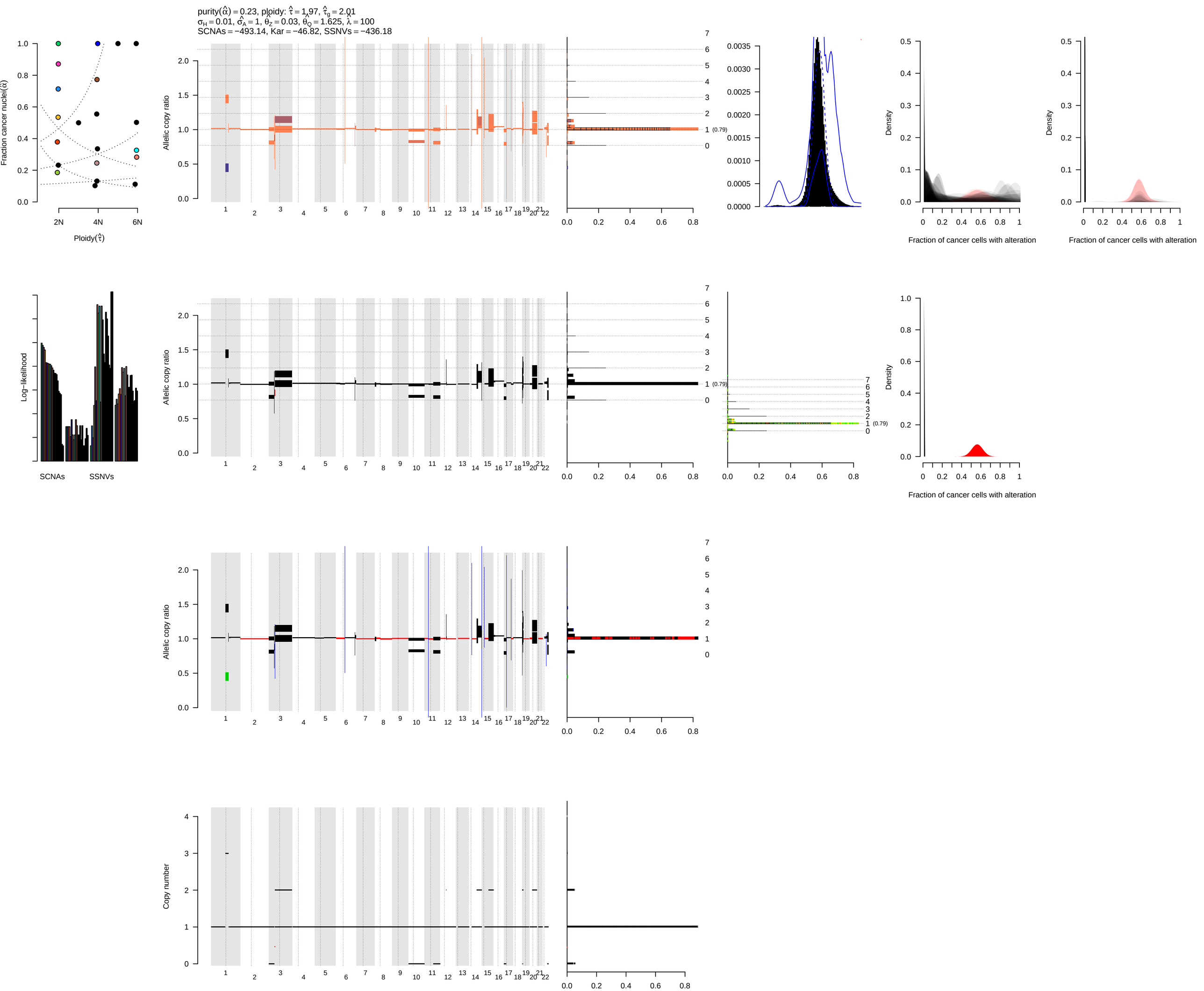

purity($\hat{\alpha}$) = 0.77, ploidy: $\hat{\tau}$ = 3.94, $\hat{\tau}_g$ = 4
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.26, $\hat{\lambda}$ = 100
SCNAs = −474.4, Kar = −4.62, SSNVs = −625.59
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.8)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sol/2
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

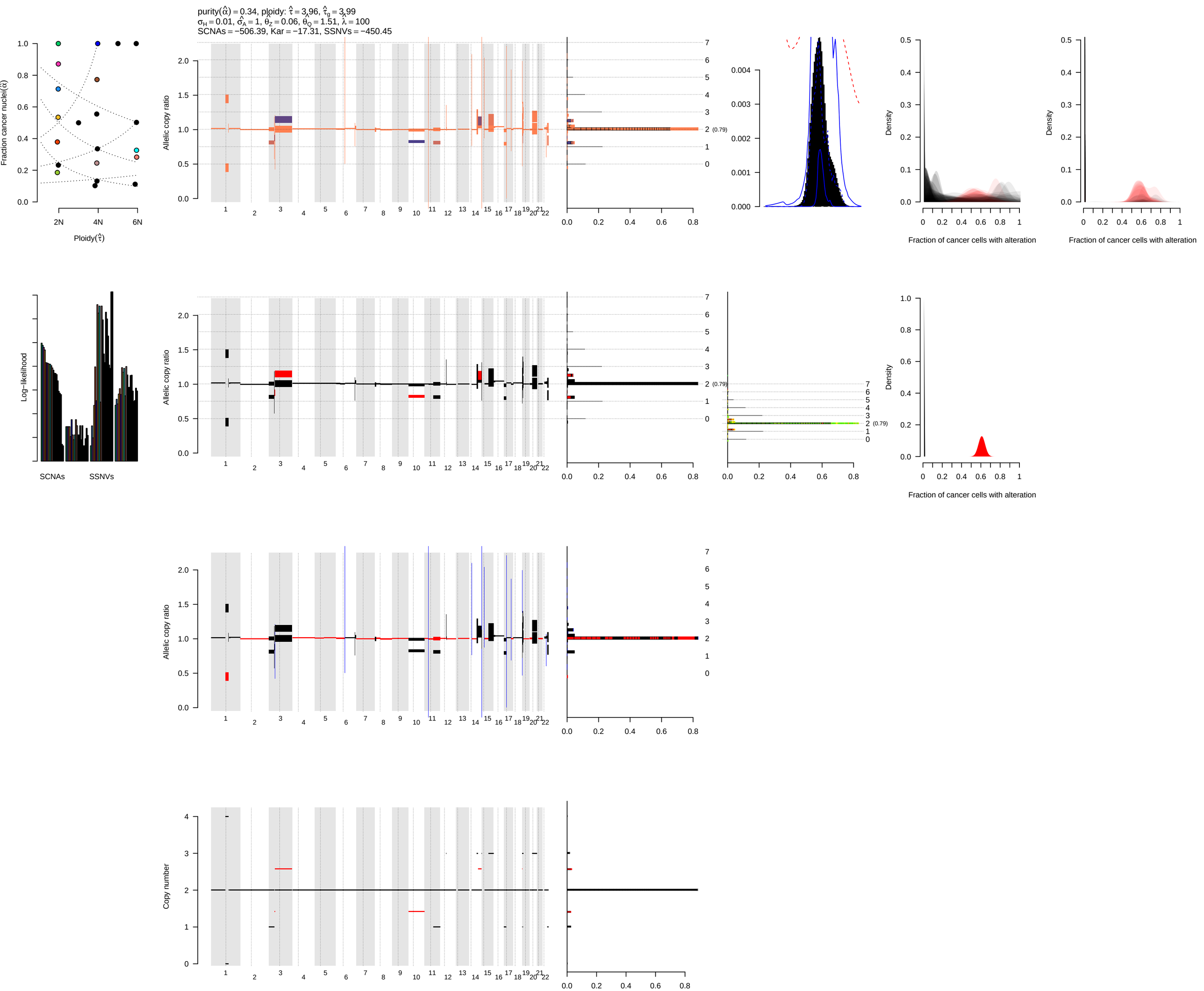

purity($\hat{\alpha}$) = 0.25, ploidy: $\hat{\tau}_A$ = 3.93, $\hat{\tau}_g$ = 4
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0, θ_Q = 1.548, $\hat{\lambda}$ = 100
SCNAs = −479.13, Kar = −17.31, SSNVs = −423.18
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.79)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_s
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s

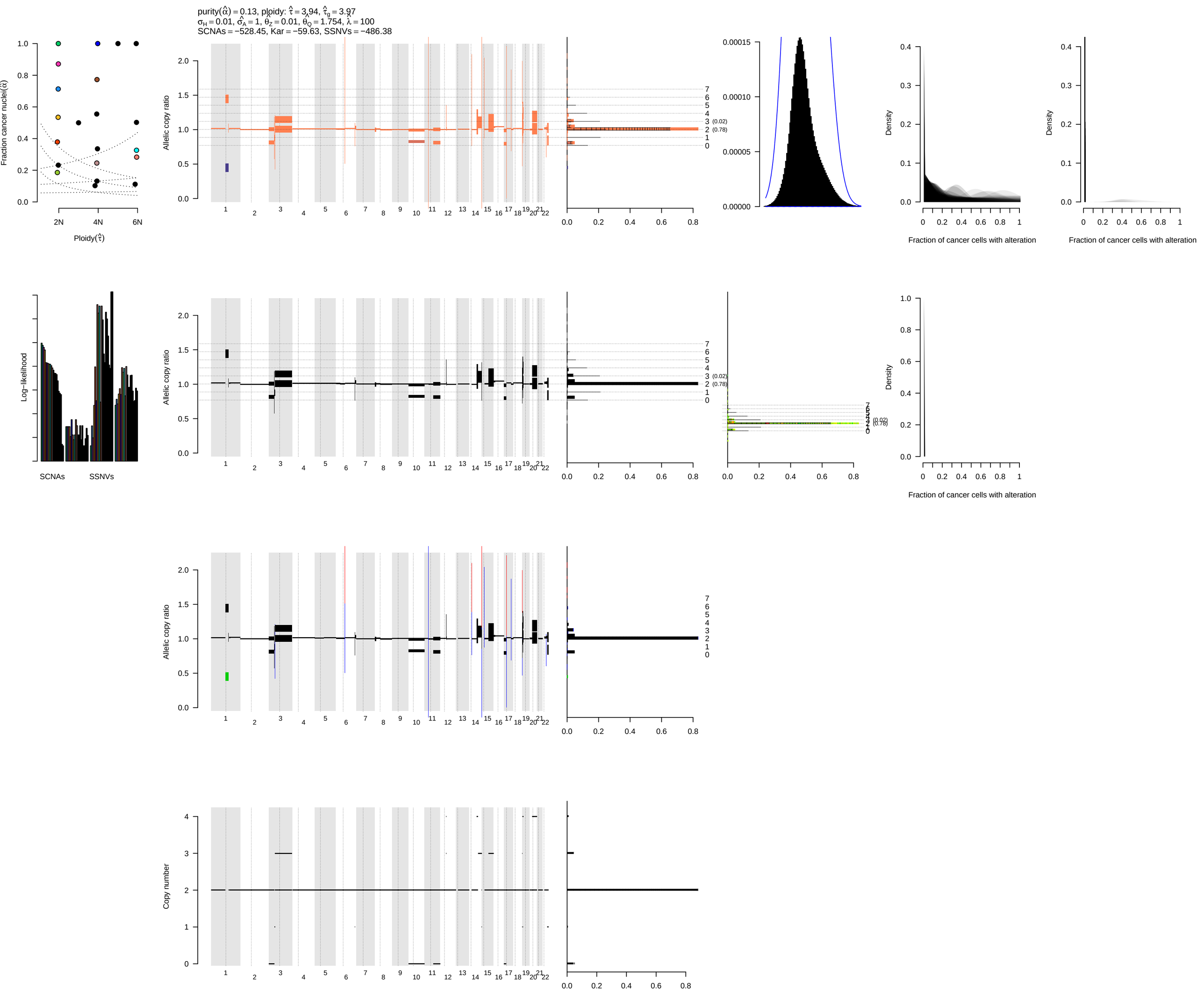

purity($\hat{\alpha}$) = 0.5, ploidy: $\hat{\tau}$ = 5.94, $\hat{\tau}_g$ = 5.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.06, θ_Q = 1.267, $\hat{\lambda}$ = 100
SCNAs = −483.84, Kar = −36.71, SSNVs = −452.32
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.79)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
SSNV multiplicity
CCF
SSNVs on subclonal SCNAs
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

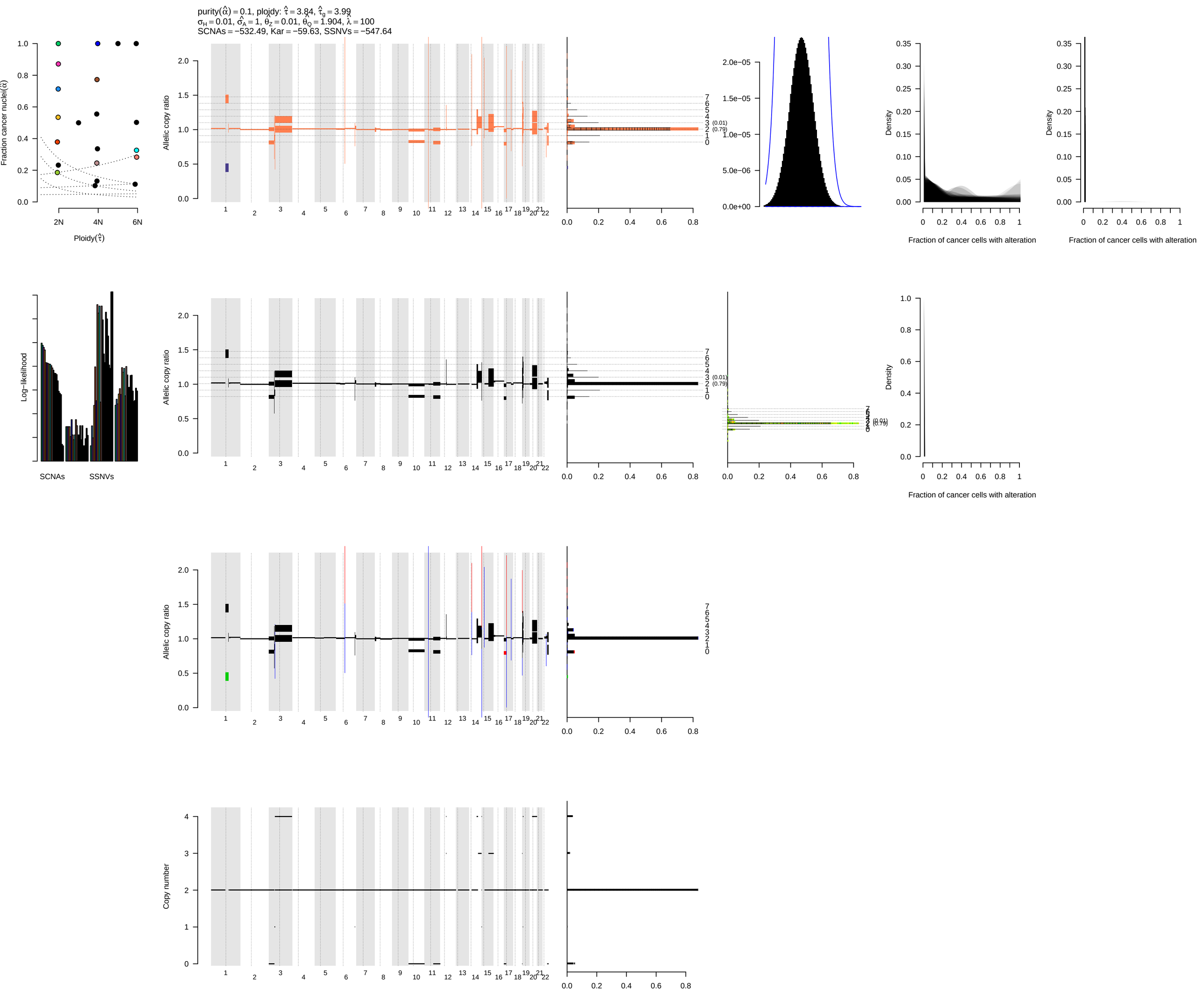

purity($\hat{\alpha}$) = 1, ploidy: $\hat{\tau}$ = 5.93, $\hat{\tau}_g$ = 5.91
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.25, $\hat{\lambda}$ = 100
SCNAs = −490.28, Kar = −36.71, SSNVs = −524.22
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

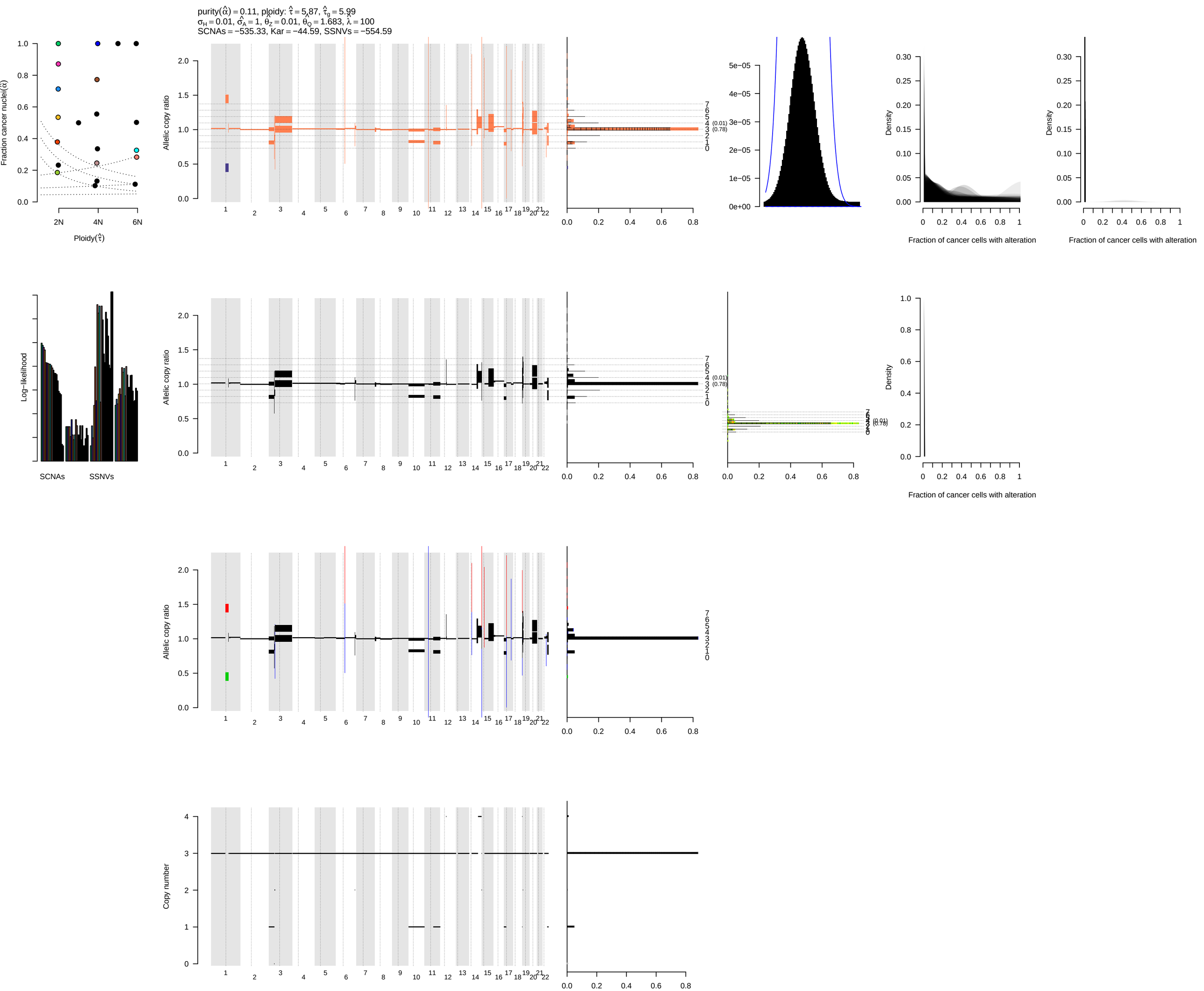

purity($\hat{\alpha}$) = 0.56, ploidy: $\hat{\tau}$ = 3.93, $\hat{\tau}_g$ = 3.91
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.1, θ_Q = 1.365, $\hat{\lambda}$ = 100
SCNAs = −490.78, Kar = −17.31, SSNVs = −542.39
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

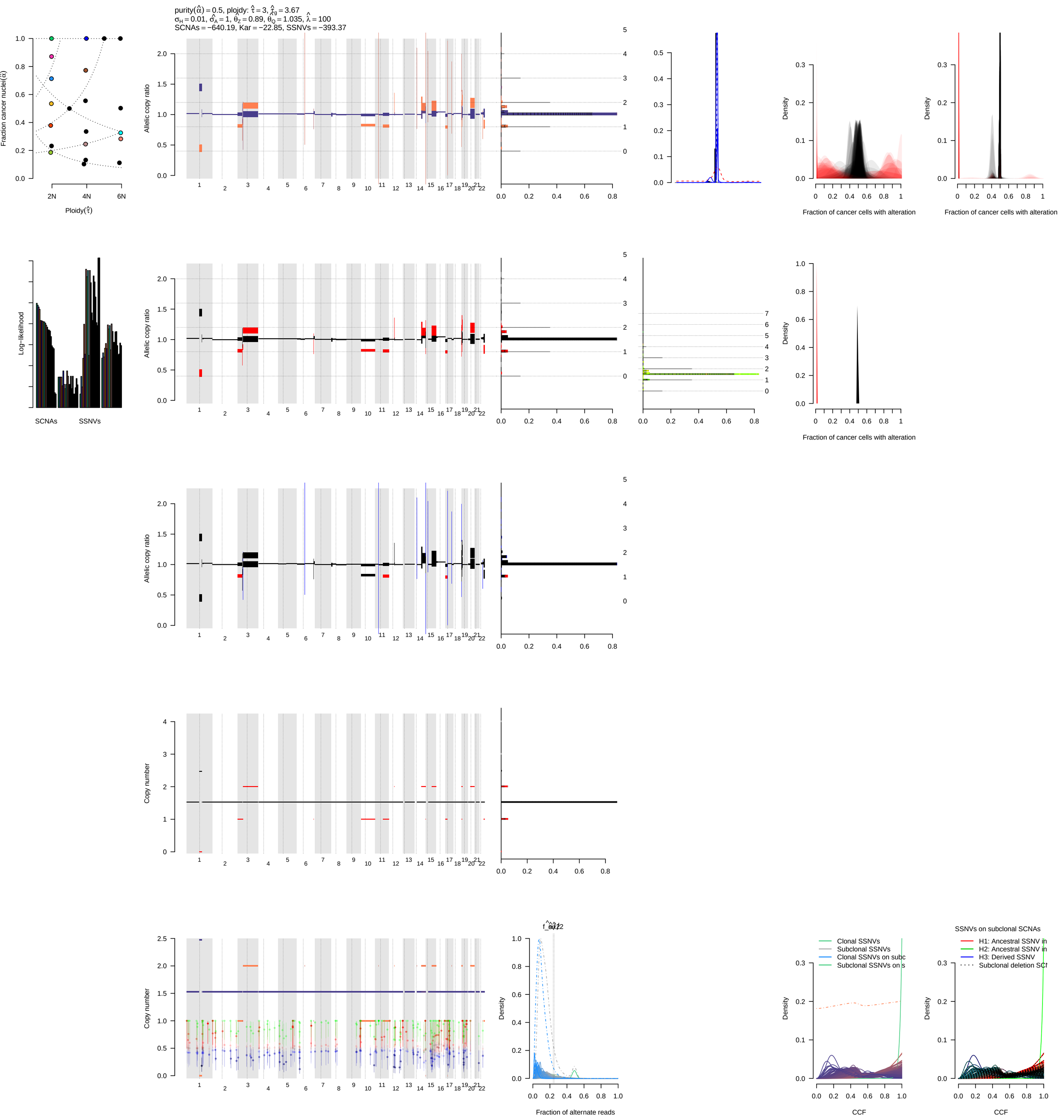

purity($\hat{\alpha}$) = 0.23, ploidy: $\hat{\tau}$ = 1.97, $\hat{\tau}_g$ = 2.01
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.03, θ_Q = 1.625, $\hat{\lambda}$ = 100
SCNAs = −493.14, Kar = −46.82, SSNVs = −436.18
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.79)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_alt
Fraction of alternate reads
SSNV multiplicity
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
CCF
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI

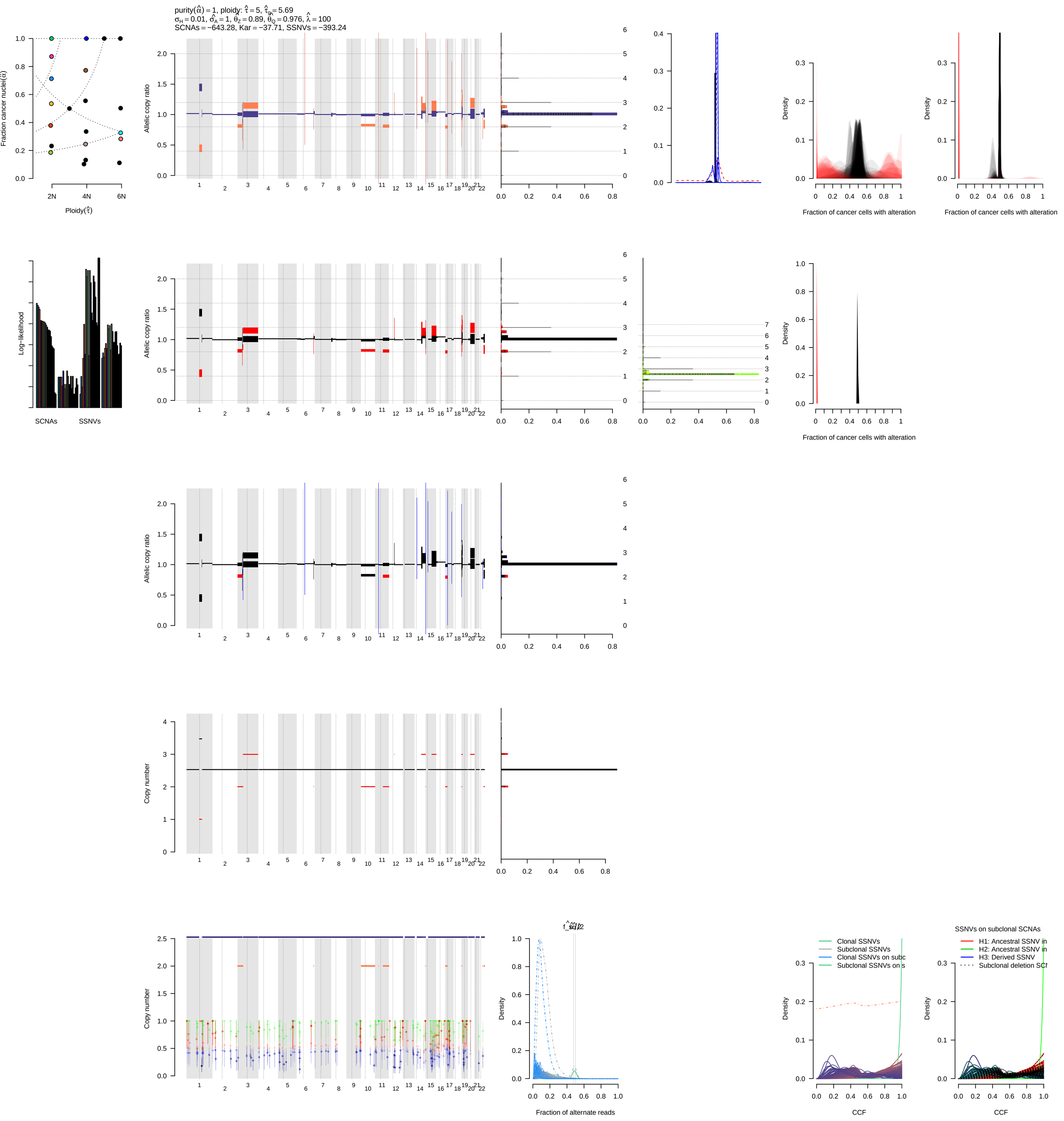

purity($\hat{\alpha}$) = 0.34, ploidy: $\hat{\tau}$ = 3.96, $\hat{\tau}_g$ = 3.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.06, θ_Q = 1.51, $\hat{\lambda}$ = 100
SCNAs = −506.39, Kar = −17.31, SSNVs = −450.45
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI


purity($\hat{\alpha}$) = 0.13, ploidy: $\hat{\tau}$ = 3.94, $\hat{\tau}_g$ = 3.97
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.01, θ_Q = 1.754, $\hat{\lambda}$ = 100
SCNAs = −528.45, Kar = −59.63, SSNVs = −486.38
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
(0.02)
(0.78)
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_obs
Fraction of alternate reads
SSNV multiplicity
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI
CCF


purity($\hat{\alpha}$) = 0.1, ploidy: $\hat{\tau}$ = 3.84, $\hat{\tau}_g$ = 3.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.01, θ_Q = 1.904, $\hat{\lambda}$ = 100
SCNAs = −532.49, Kar = −59.63, SSNVs = −547.64
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s


purity($\hat{\alpha}$) = 0.11, ploidy: $\hat{\tau}$ = 5.87, $\hat{\tau}_g$ = 5.99
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.01, θ_Q = 1.683, $\hat{\lambda}$ = 100
SCNAs = −535.33, Kar = −44.59, SSNVs = −554.59
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
SSNV multiplicity
CCF
Clonal SSNVs
Subclonal SSNVs
SSNVs on subclonal SCNAs
H3: Derived SSNV


purity($\hat{\alpha}$) = 0.5, ploidy: $\hat{\tau}$ = 3, $\hat{\lambda}_g$ = 3.67
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.89, θ_Q = 1.035, $\hat{\lambda}$ = 100
SCNAs = −640.19, Kar = −22.85, SSNVs = −393.37
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
Fraction of alternate reads
CCF
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI


purity($\hat{\alpha}$) = 1, ploidy: $\hat{\tau}$ = 5, $\hat{\tau}_{g\lambda}$ = 5.69
σ_H = 0.01, $\hat{\sigma}_A$ = 1, θ_Z = 0.89, θ_Q = 0.976, $\hat{\lambda}$ = 100
SCNAs = −643.28, Kar = −37.71, SSNVs = −393.24
Fraction cancer nuclei($\hat{\alpha}$)
Ploidy($\hat{\tau}$)
2N
4N
6N
Allelic copy ratio
Density
Fraction of cancer cells with alteration
Log−likelihood
SCNAs
SSNVs
Copy number
f_sc
Fraction of alternate reads
Clonal SSNVs
Subclonal SSNVs
Clonal SSNVs on subc
Subclonal SSNVs on s
CCF
SSNVs on subclonal SCNAs
H1: Ancestral SSNV in
H2: Ancestral SSNV in
H3: Derived SSNV
Subclonal deletion SCI