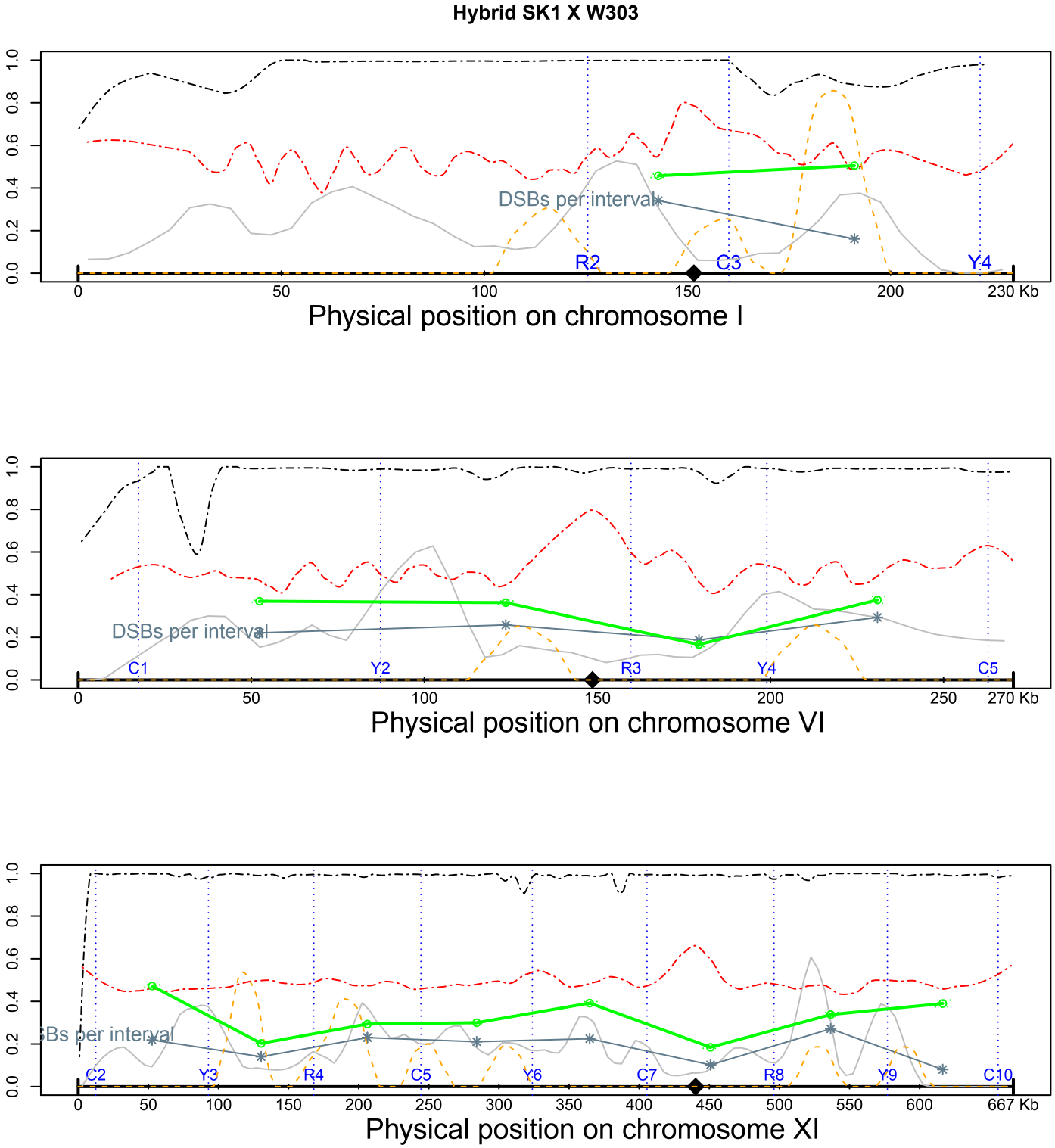
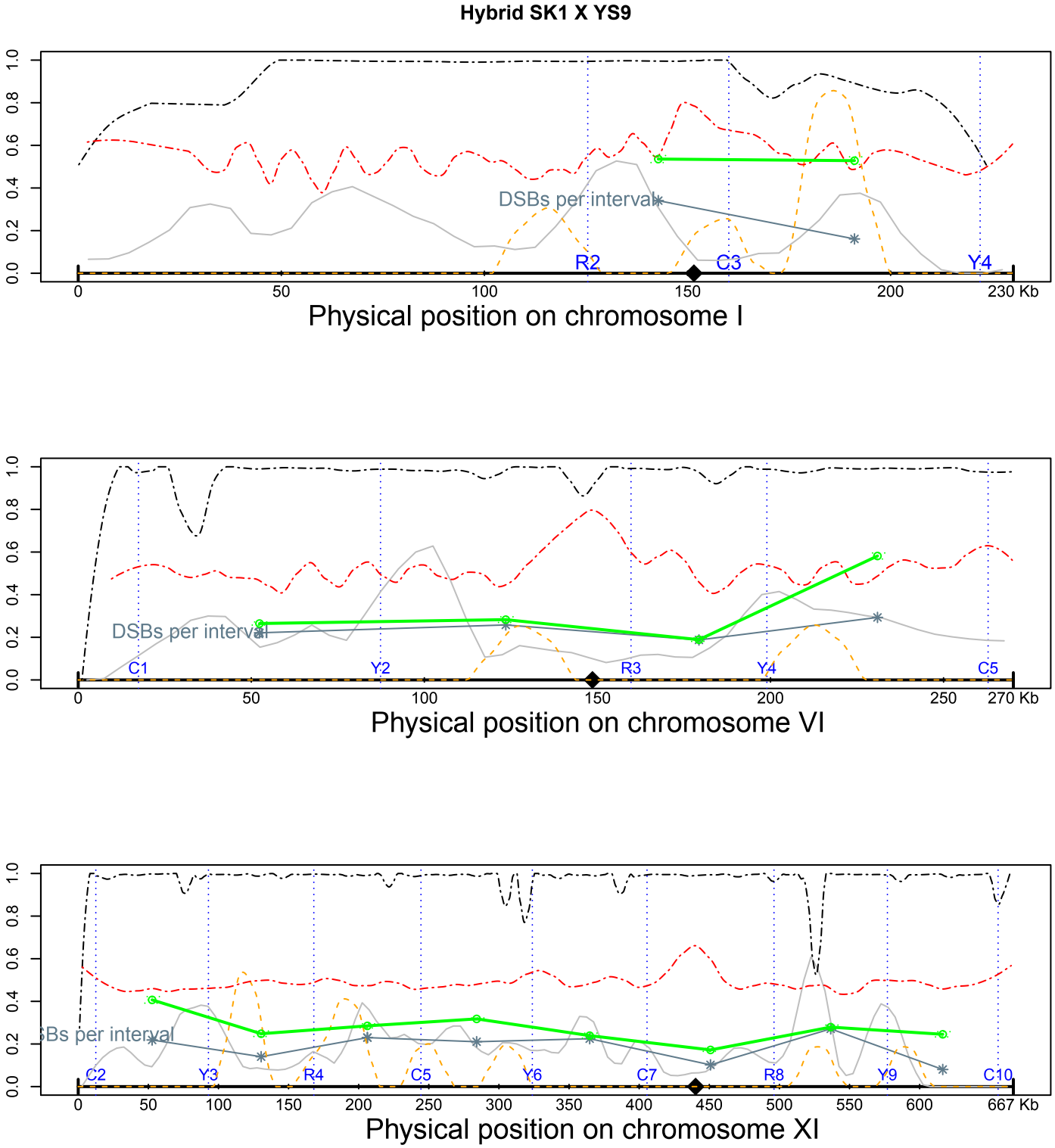
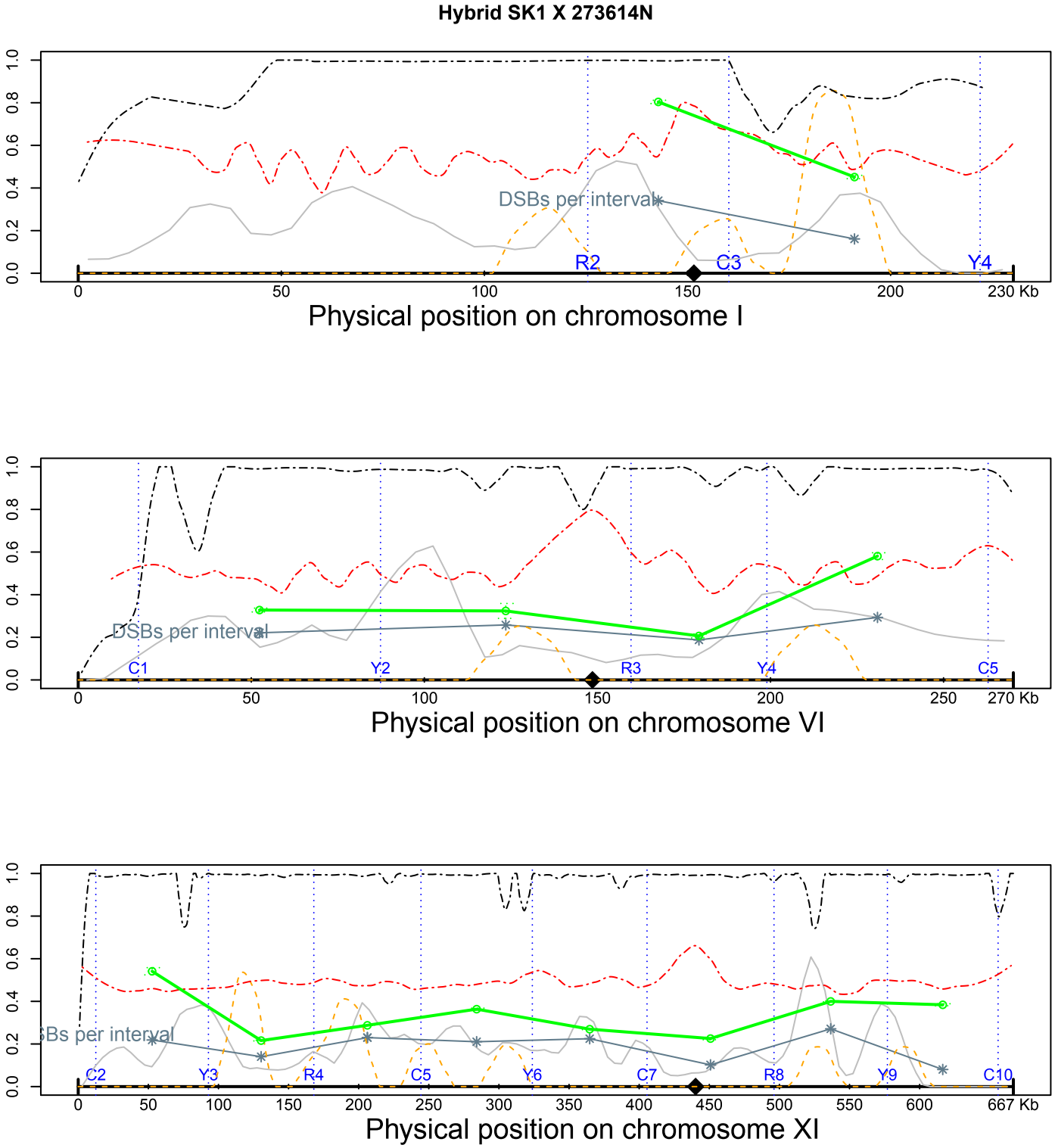
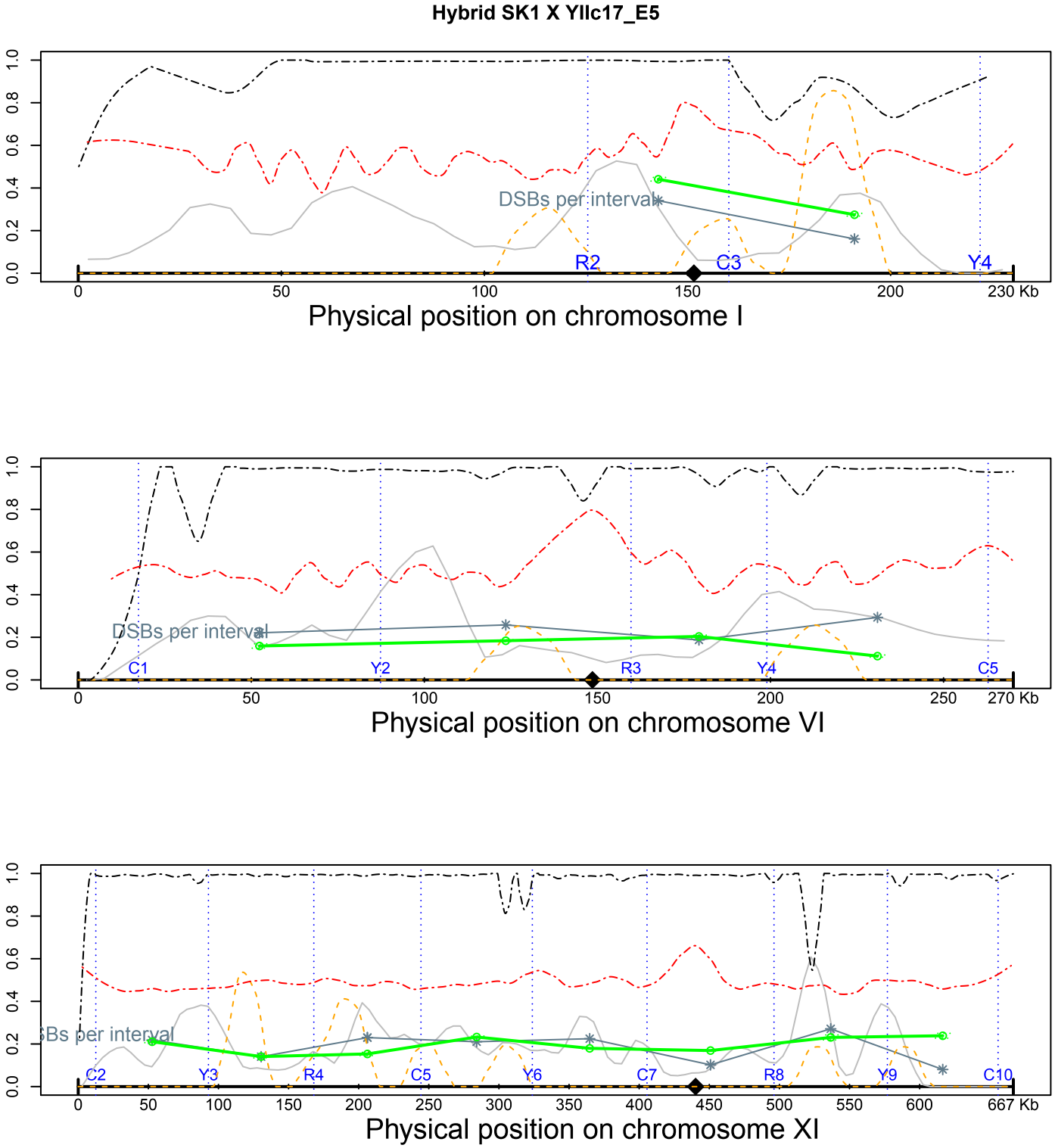
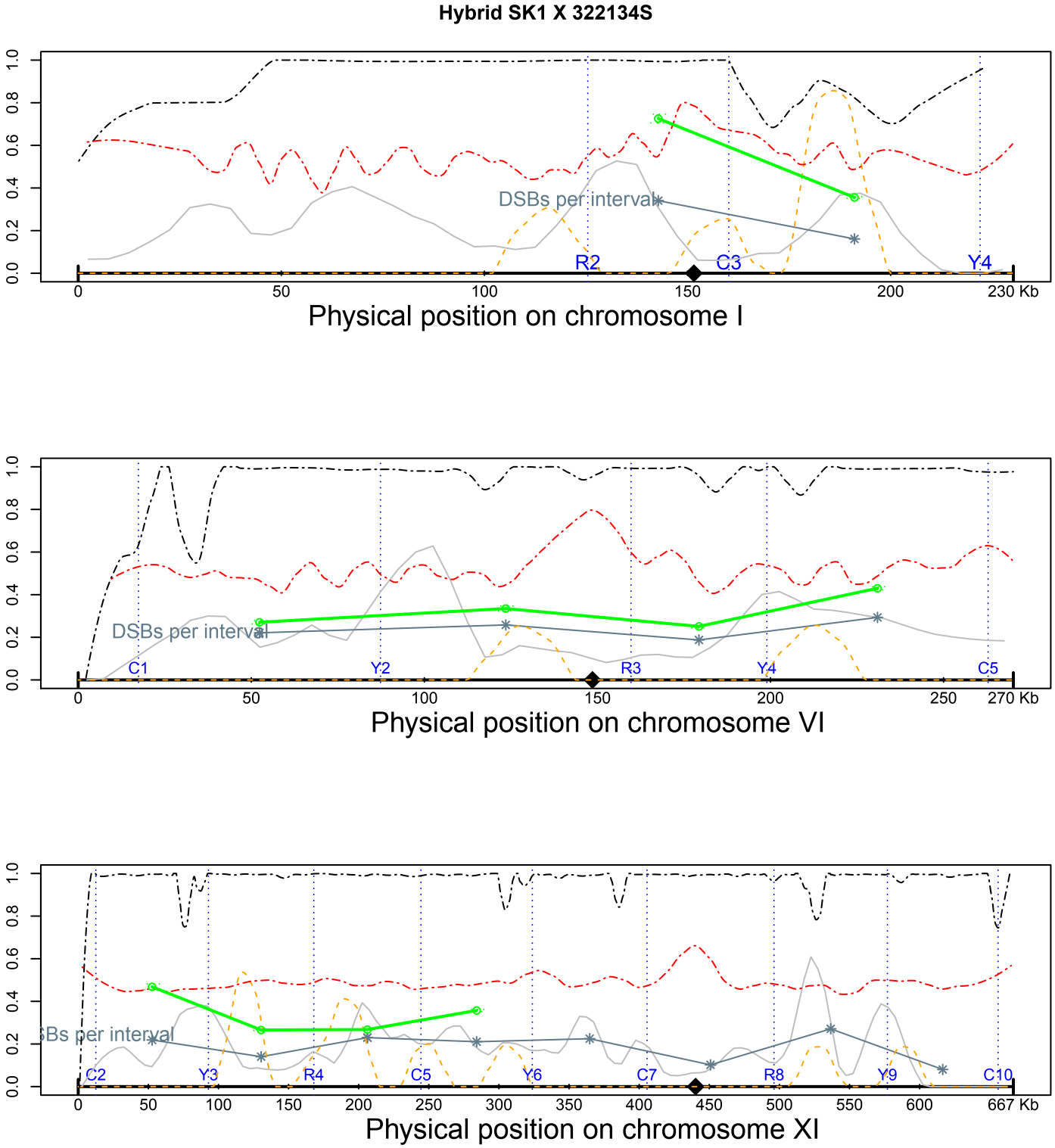
Figure S7: Recombination rates in cM/kbp along chromosomes for hybrids between SK1 and each of the 22 strains of the study (one page per strain). Error bars indicate 95% confidence intervals based on four biological replicates. X-axis: physical position along chromosome I (upper panel), VI (middle panel) or XI (lower panel). Also shown: (1) DSBs per interval: average frequency of double strand breaks per base (Pan *et al.* 2011) between markers, (2) DSB level: average number of DSBs per 5kb window smoothed using "loess" , (3) H3K4Me3 level: arbitrary units based on (Liu *et al.* 2005) and smoothed using "loess", (4) Rec 8 level: arbitrary units based on (Sun *et al.* 2015) and smoothed using "loess", and (5) Sequence similarity: proportion of identical bases between homologs (see Materials and Methods) smoothed using "loess". Vertical blue dashed lines indicate the positions of fluorescent markers. Diamonds at the bottom show centromere positions.

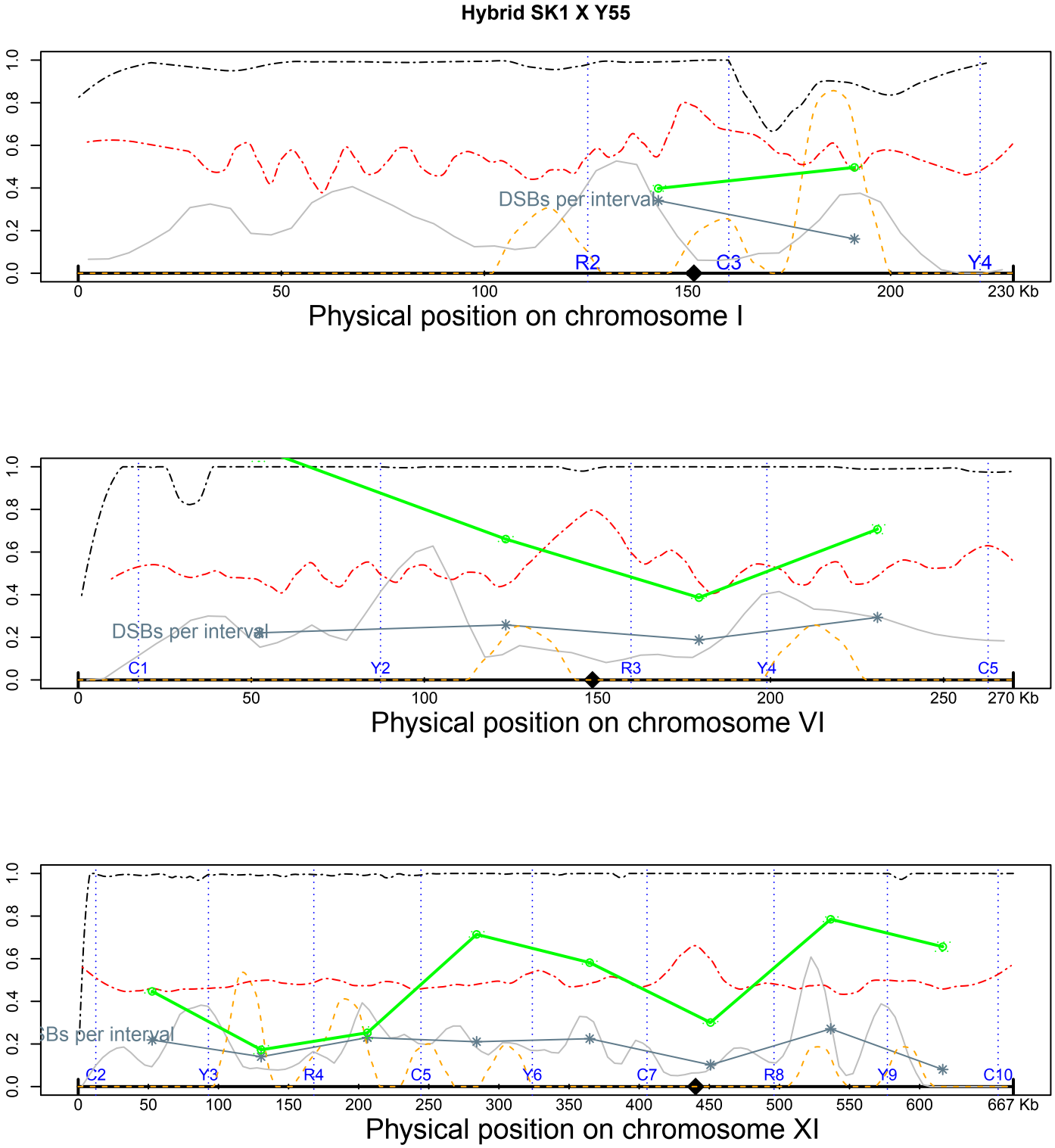

Hybrid SK1 X W303
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
DSBs per interval
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

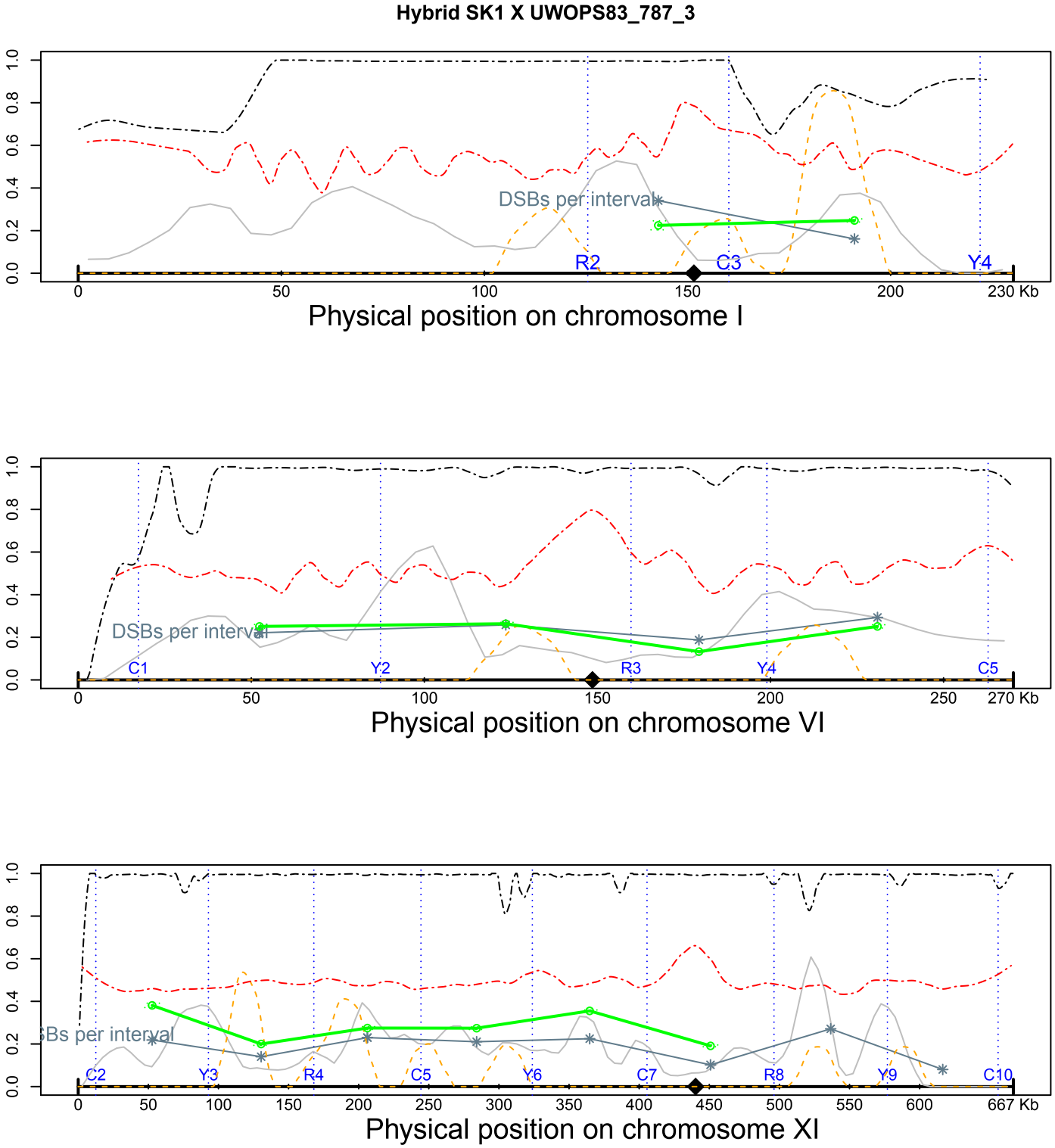

Hybrid SK1 X YS9
0.0
0.2
0.4
0.6
0.8
1.0
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

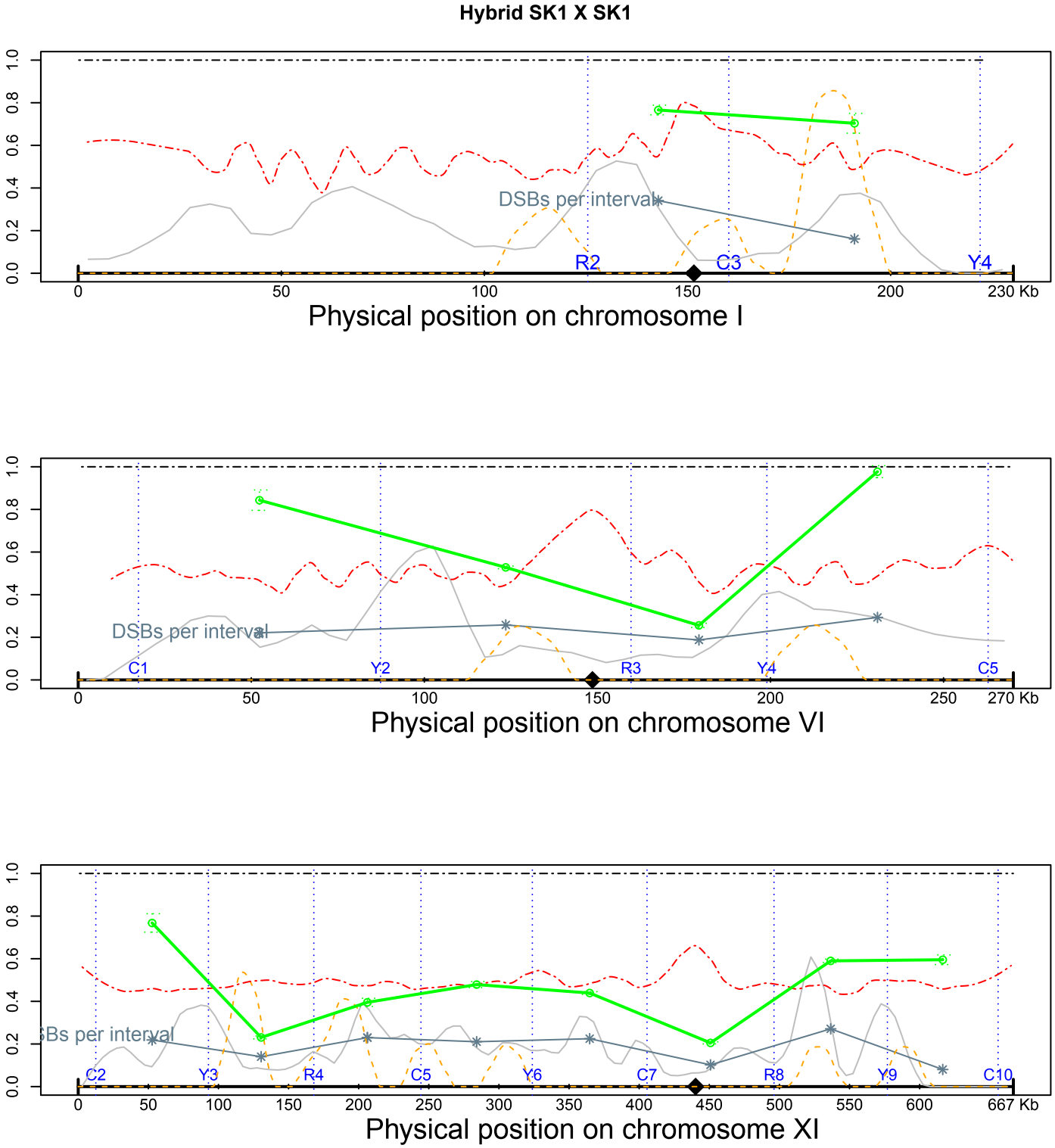

Hybrid SK1 X 273614N
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
DSBs per interval
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X YIIc17_E5
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

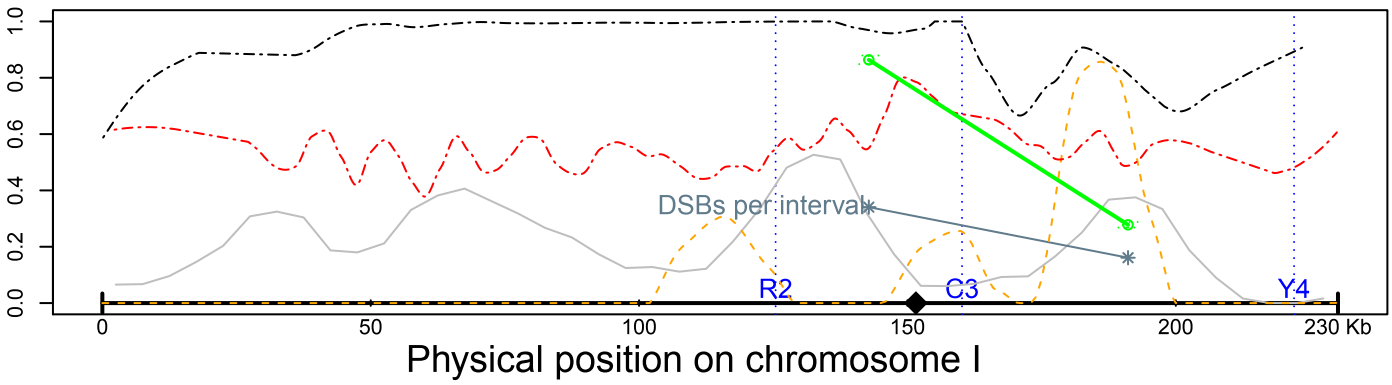

Hybrid SK1 X 322134S
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X Y55
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

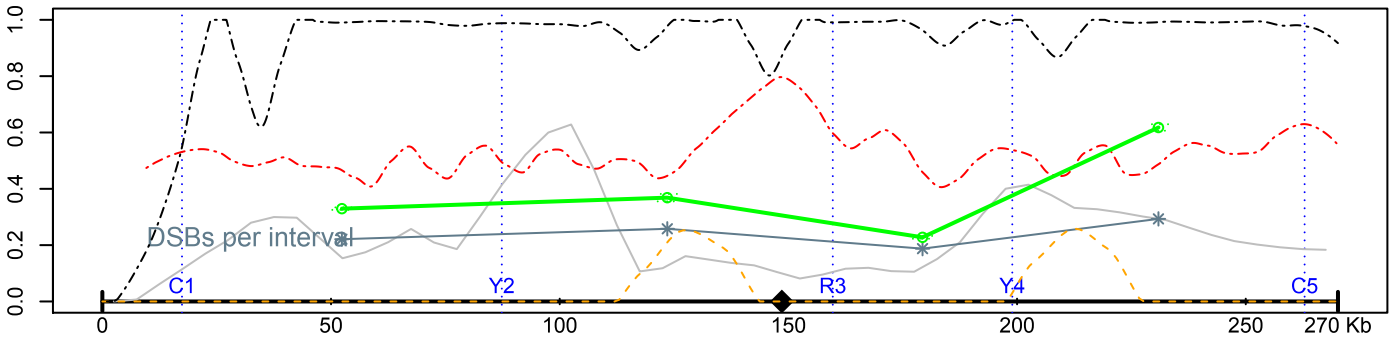

Hybrid SK1 X UWOPS83_787_3
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
0.0
0.2
0.4
0.6
0.8
1.0
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X SK1
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

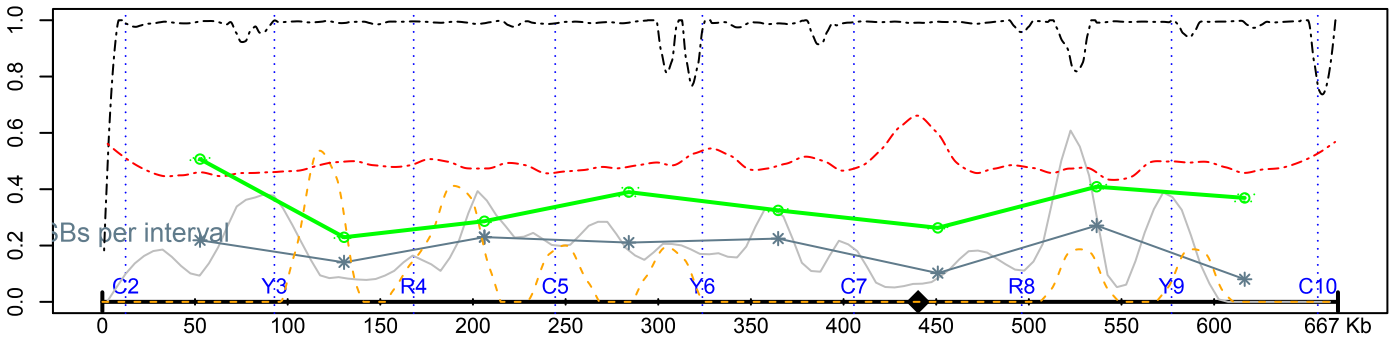
Hybrid SK1 X BC187



Physical position on chromosome I



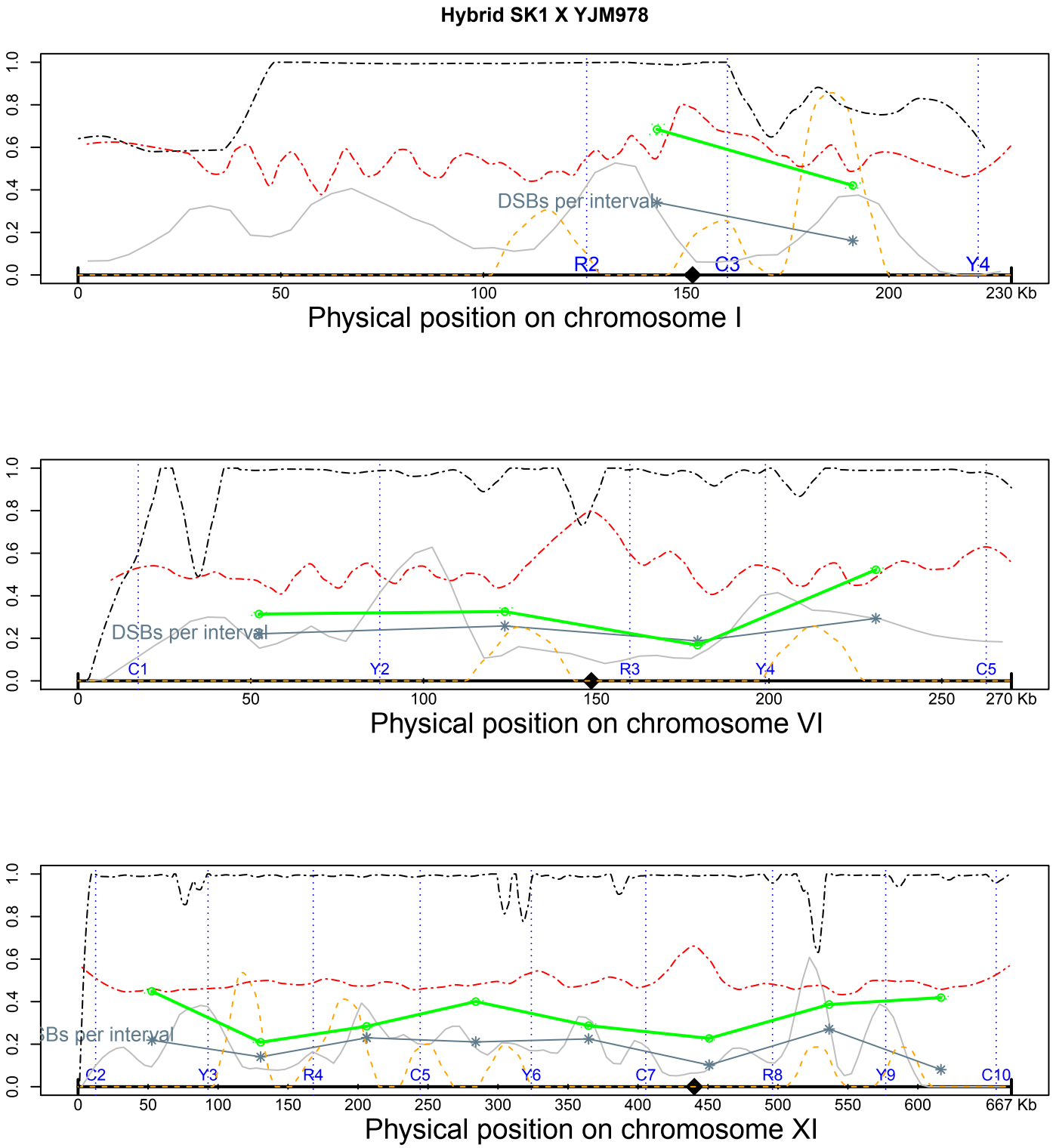
Physical position on chromosome VI

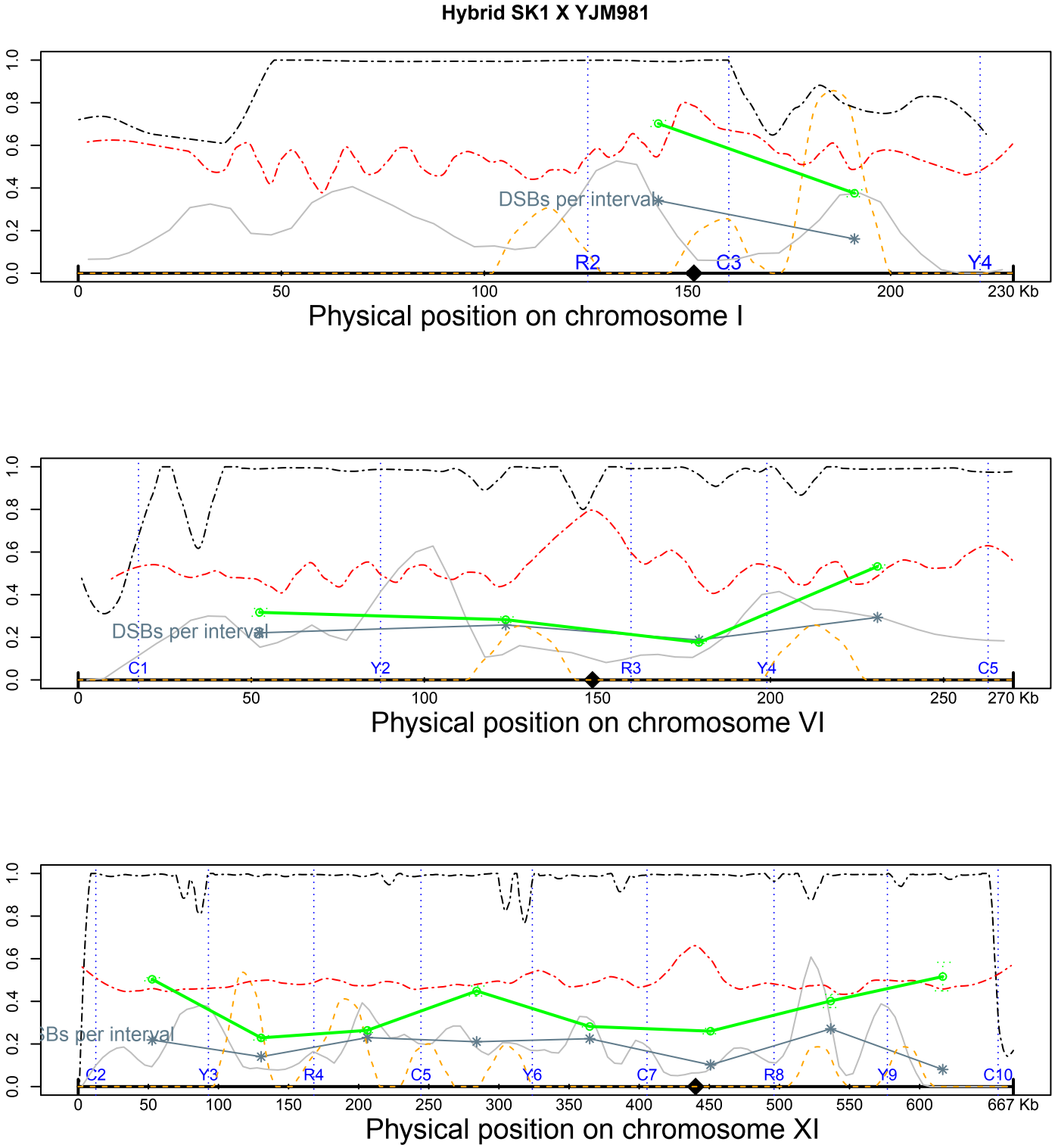


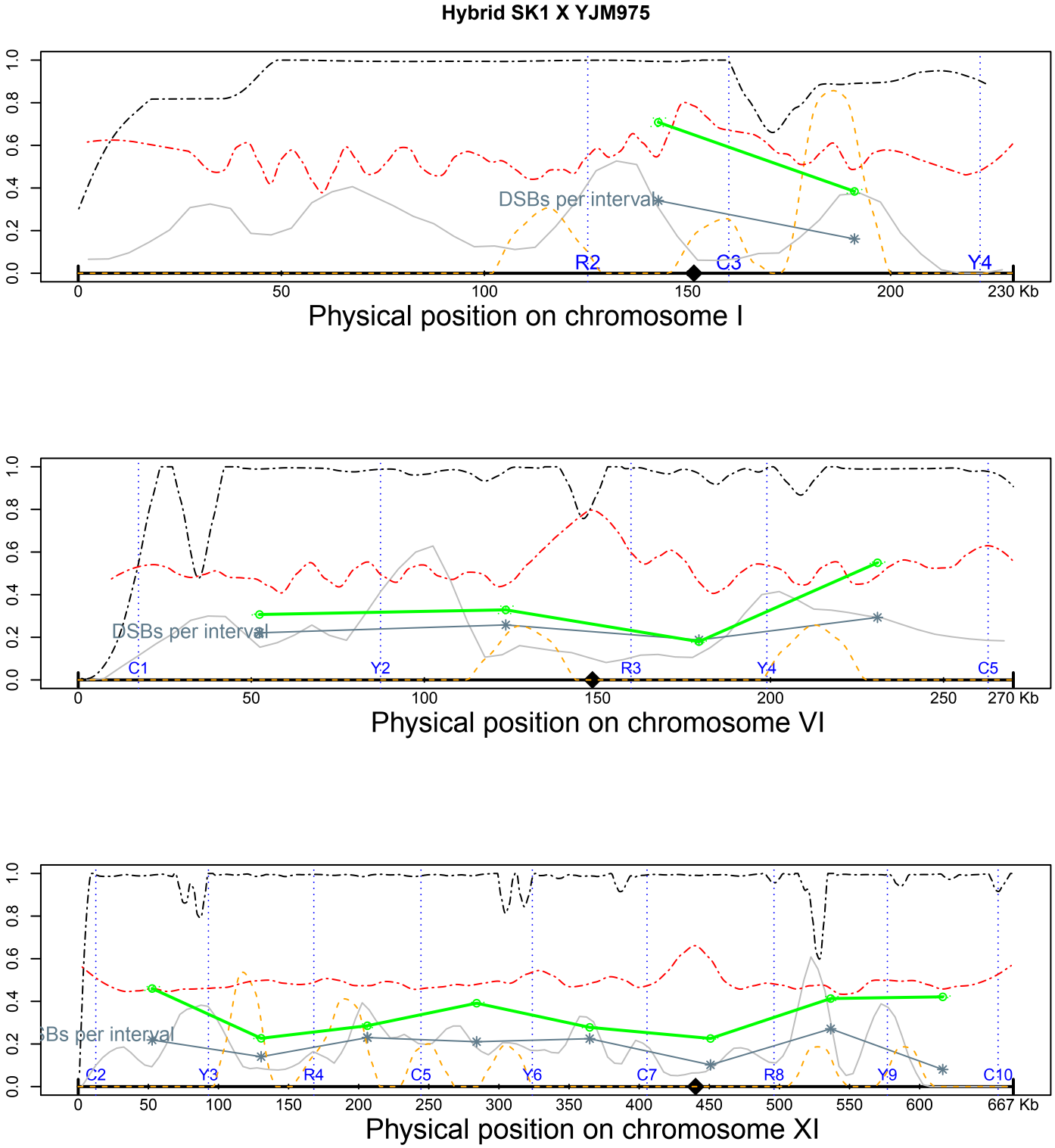
Physical position on chromosome XI

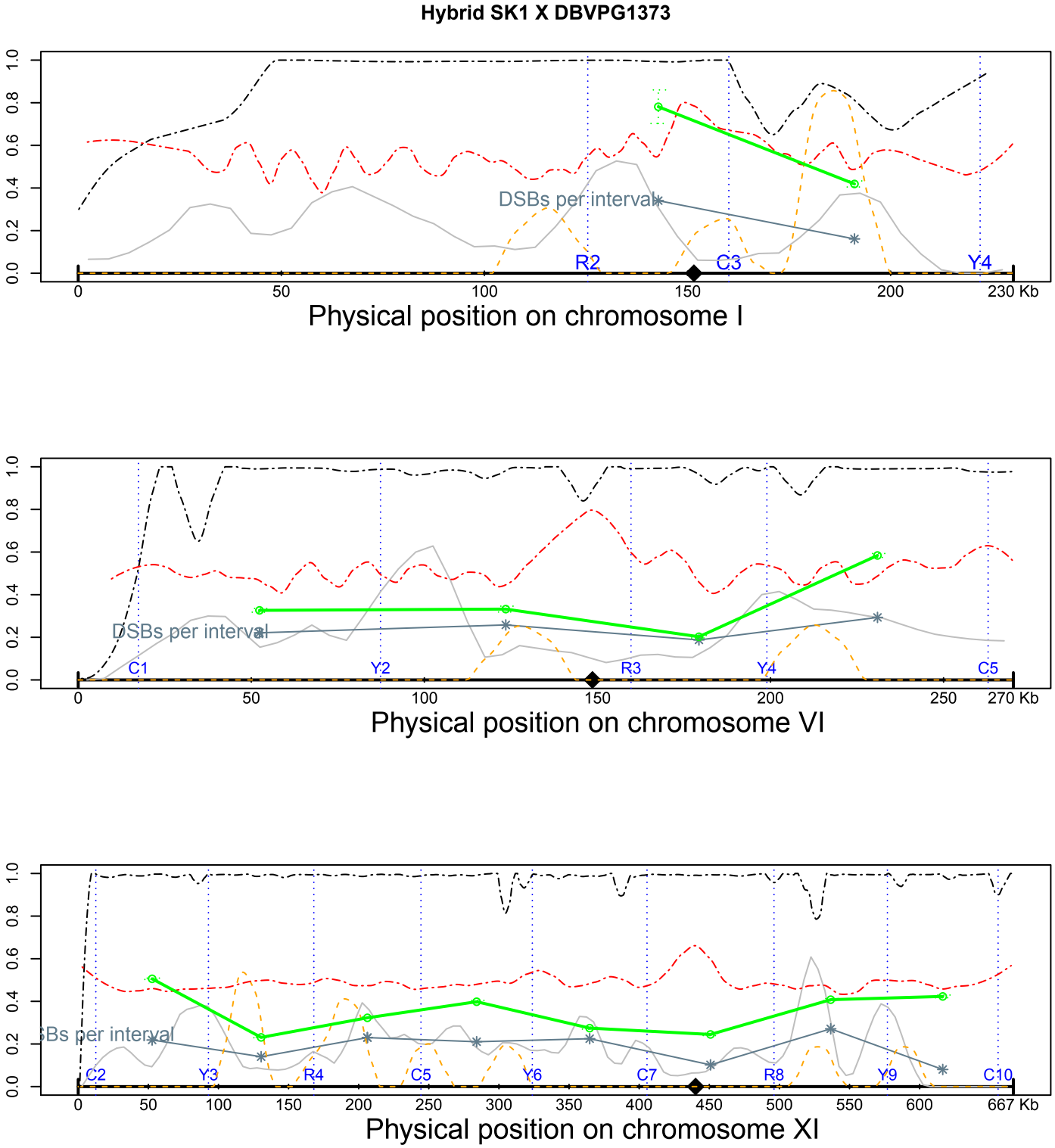
Recombination rate

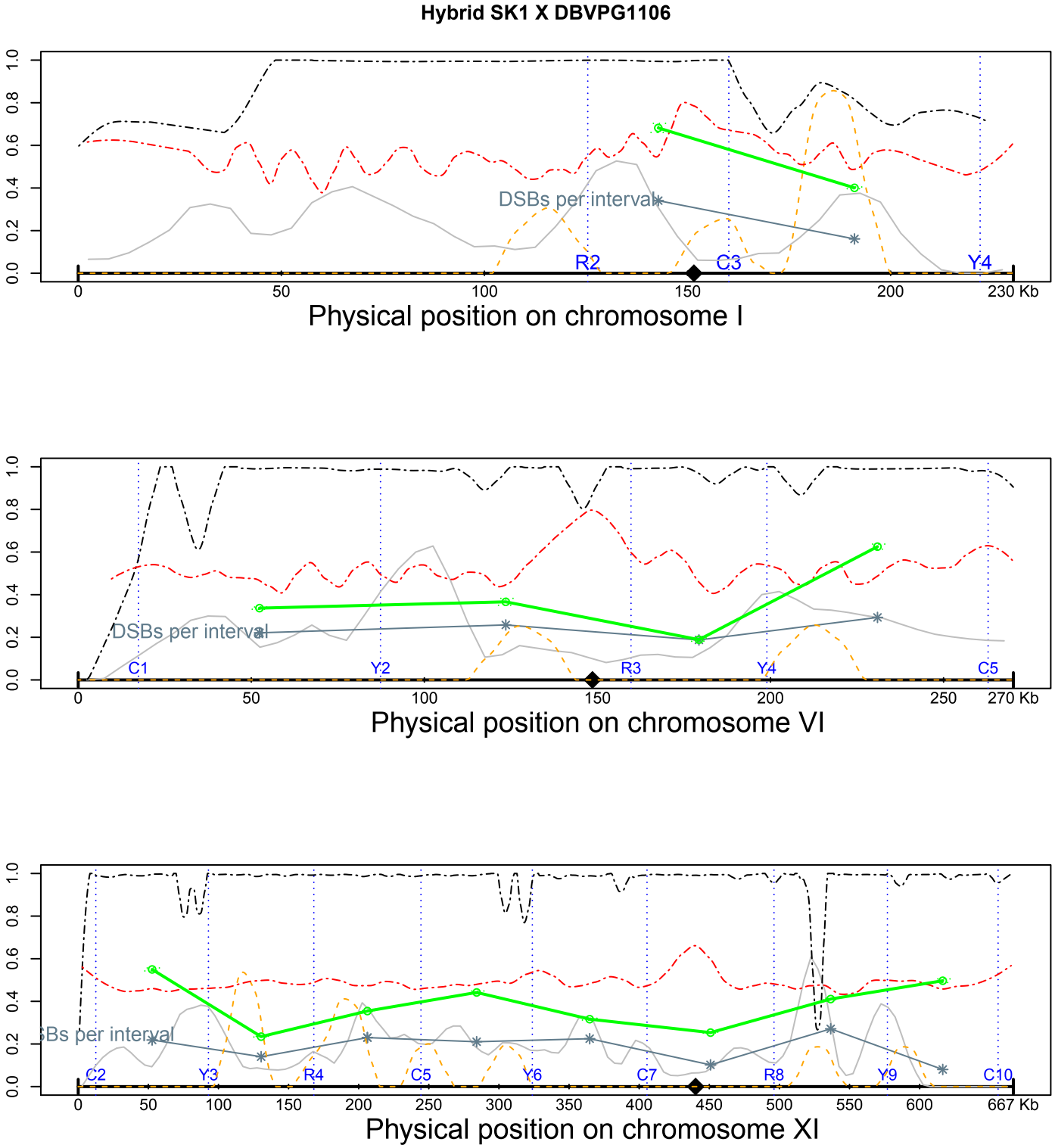
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

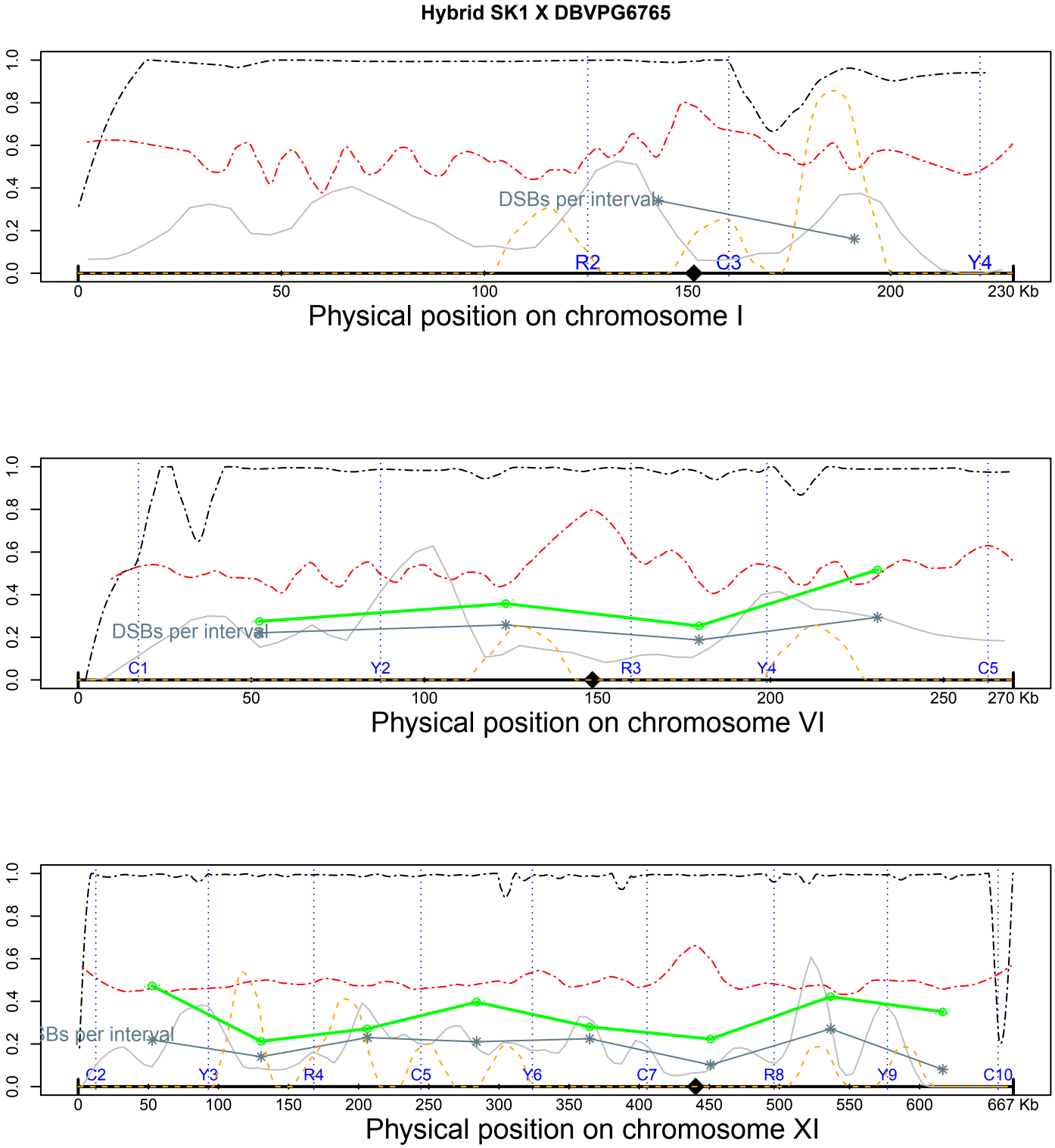

Hybrid SK1 X YJM978
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

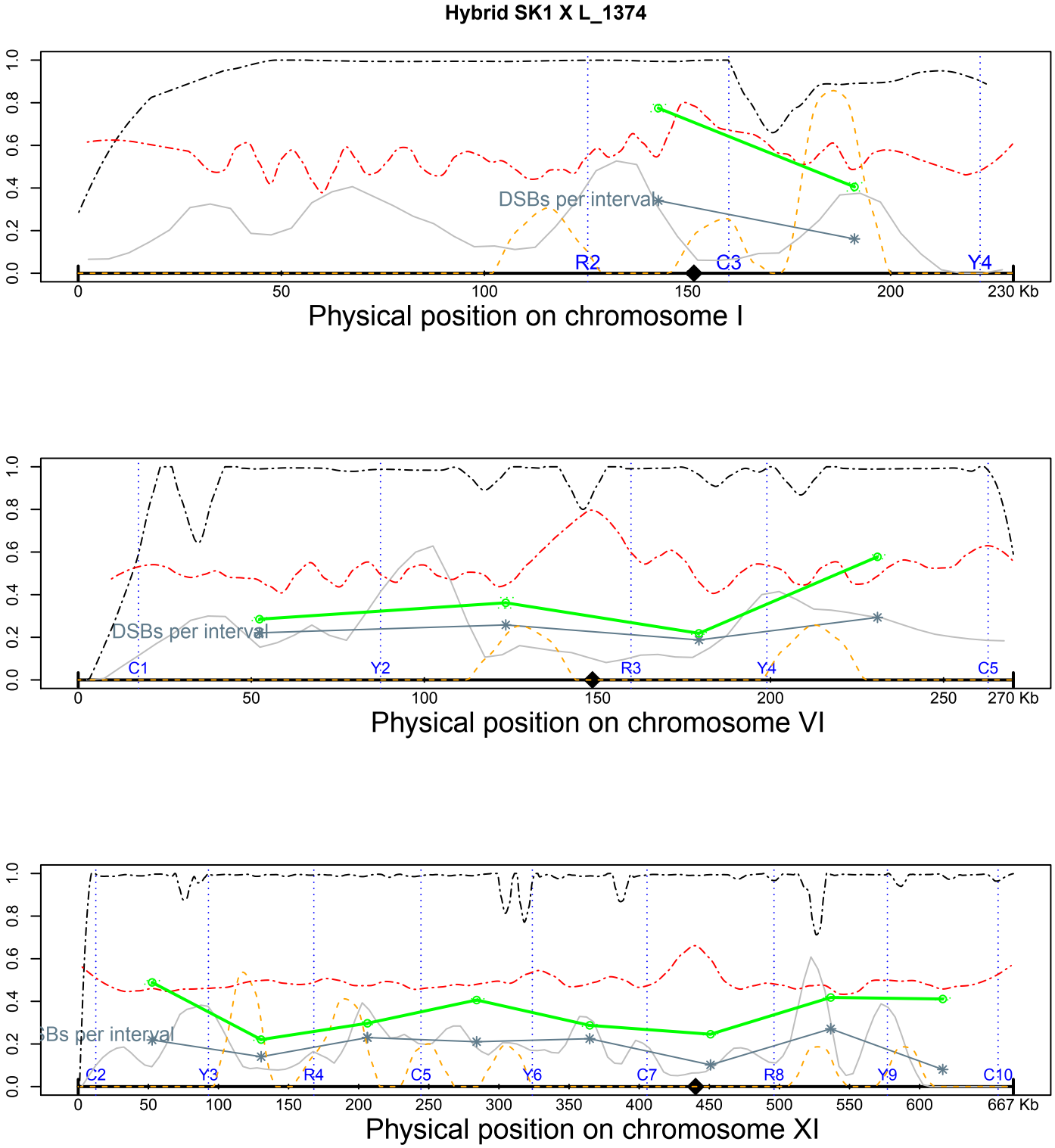

Hybrid SK1 X YJM981
0.0
0.2
0.4
0.6
0.8
1.0
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

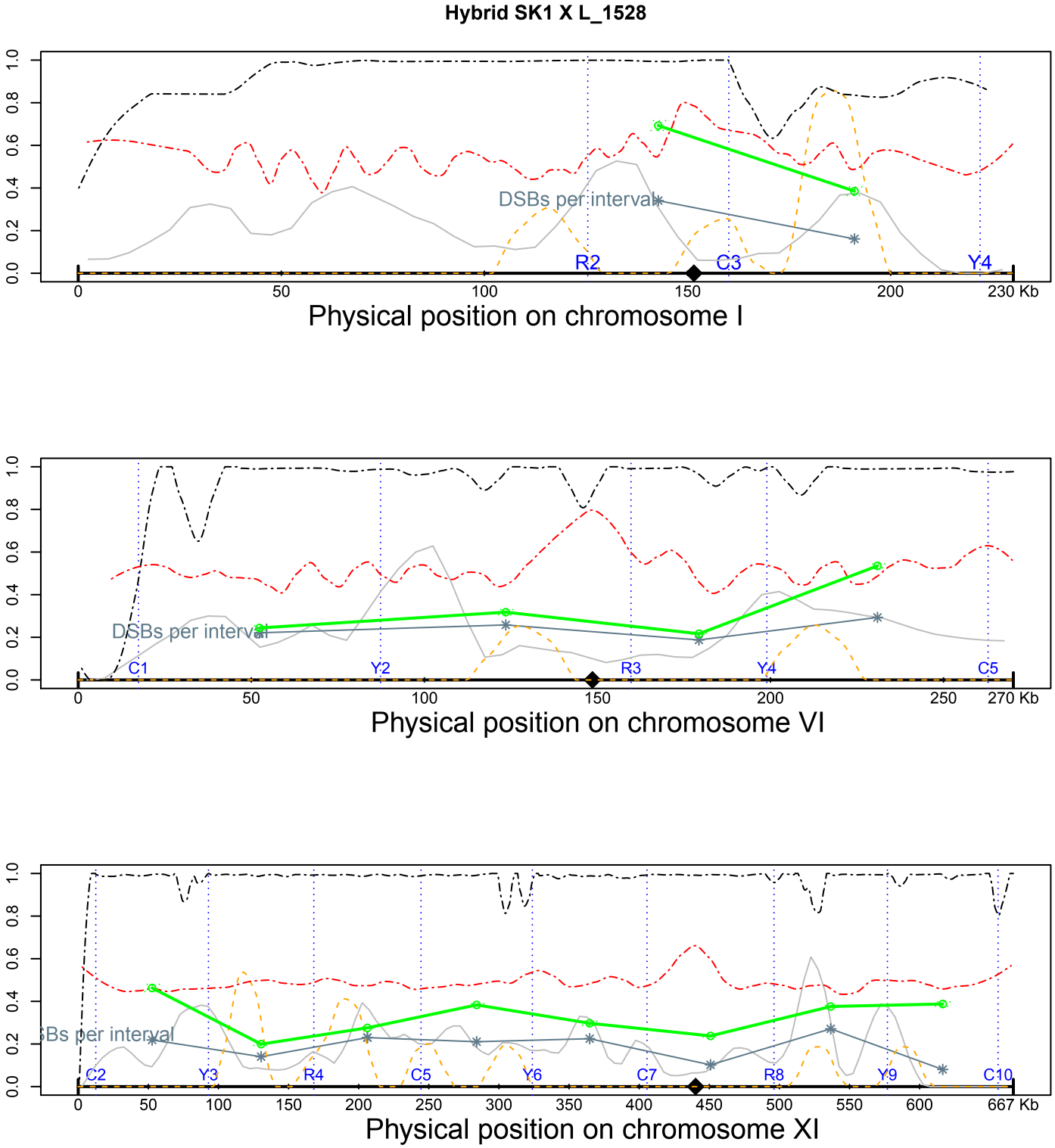

Hybrid SK1 X YJM975
0.0
0.2
0.4
0.6
0.8
1.0
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

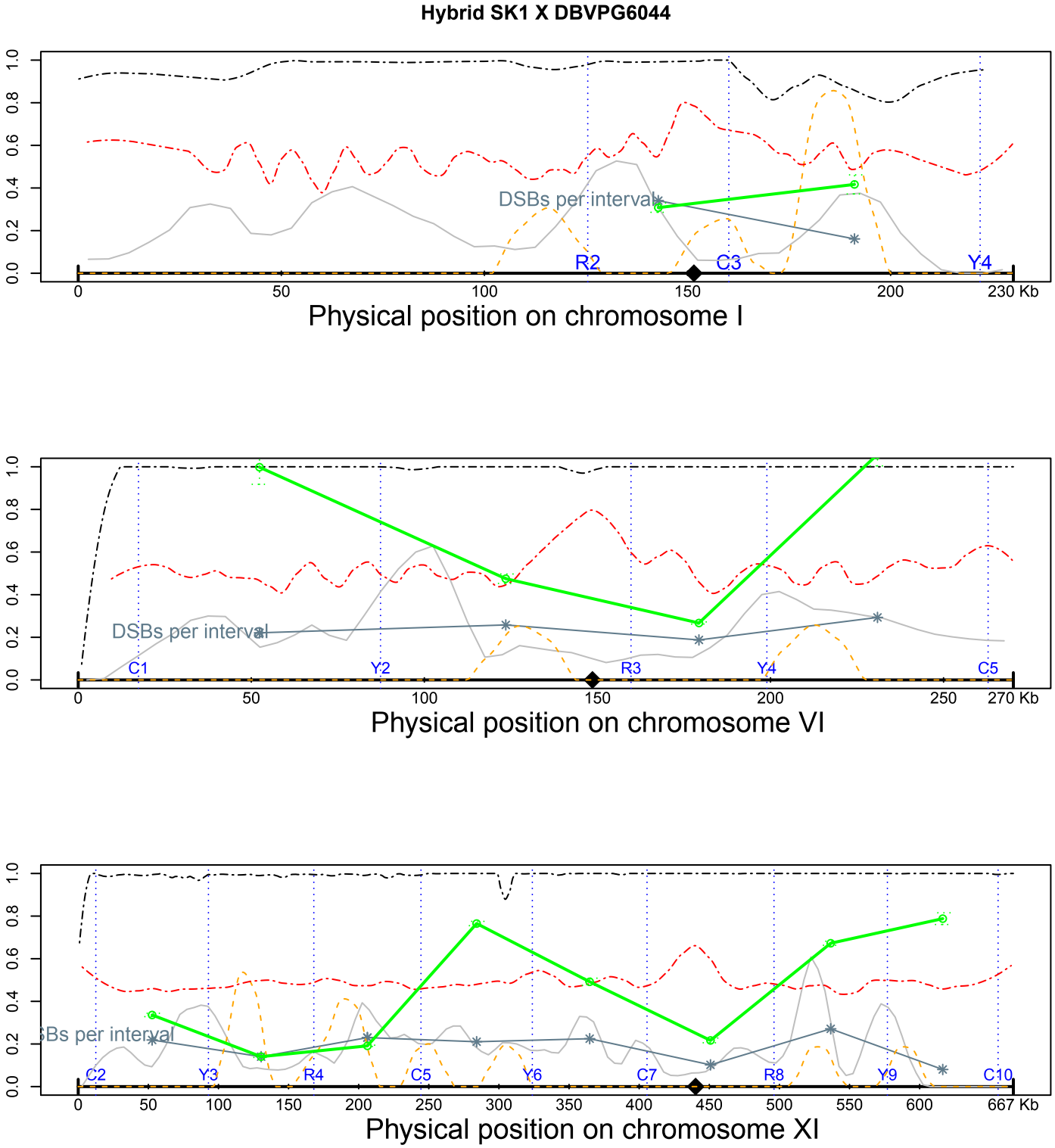

Hybrid SK1 X DBVPG1373
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
0.0
0.2
0.4
0.6
0.8
1.0
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

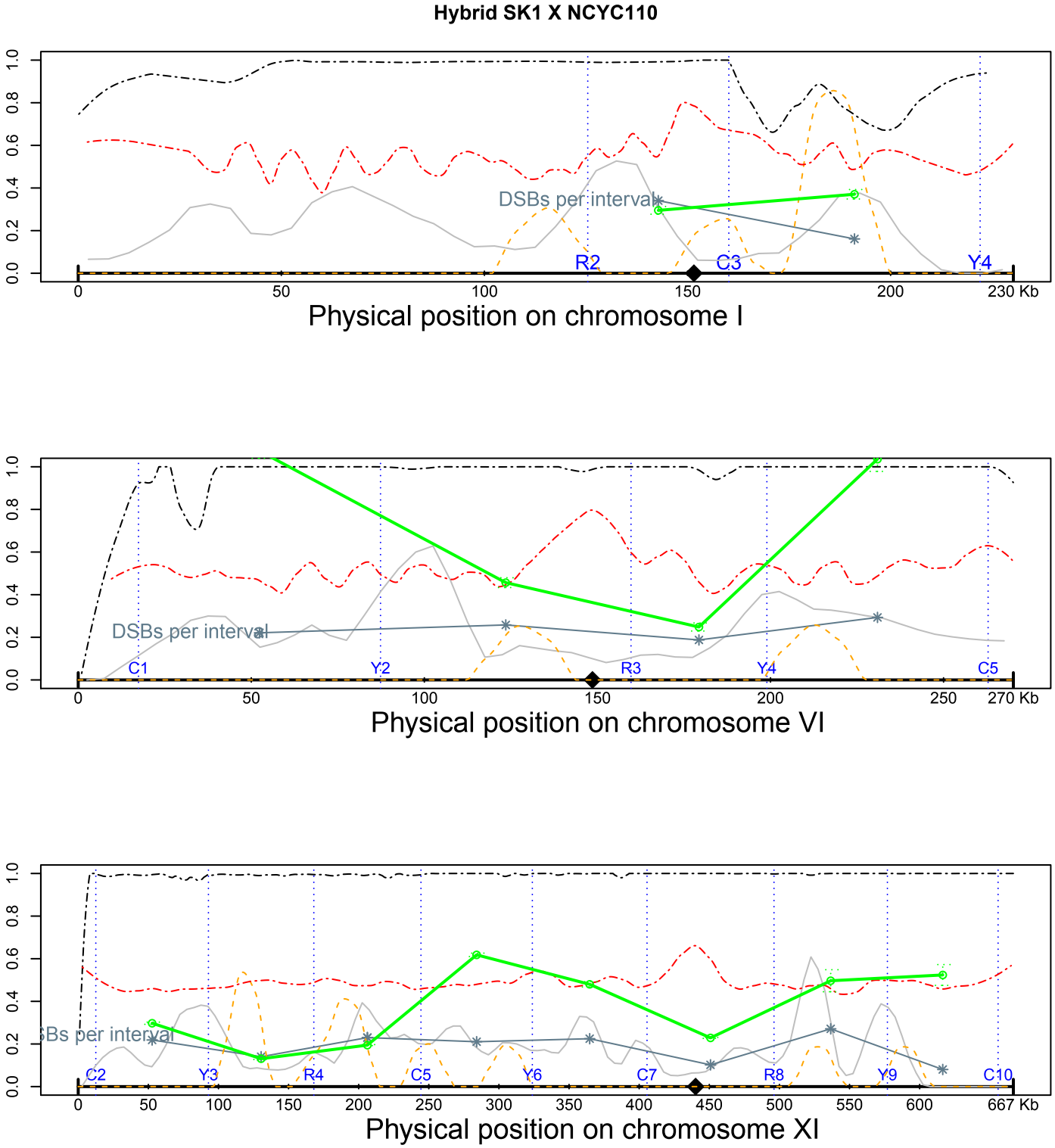

Hybrid SK1 X DBVPG1106
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

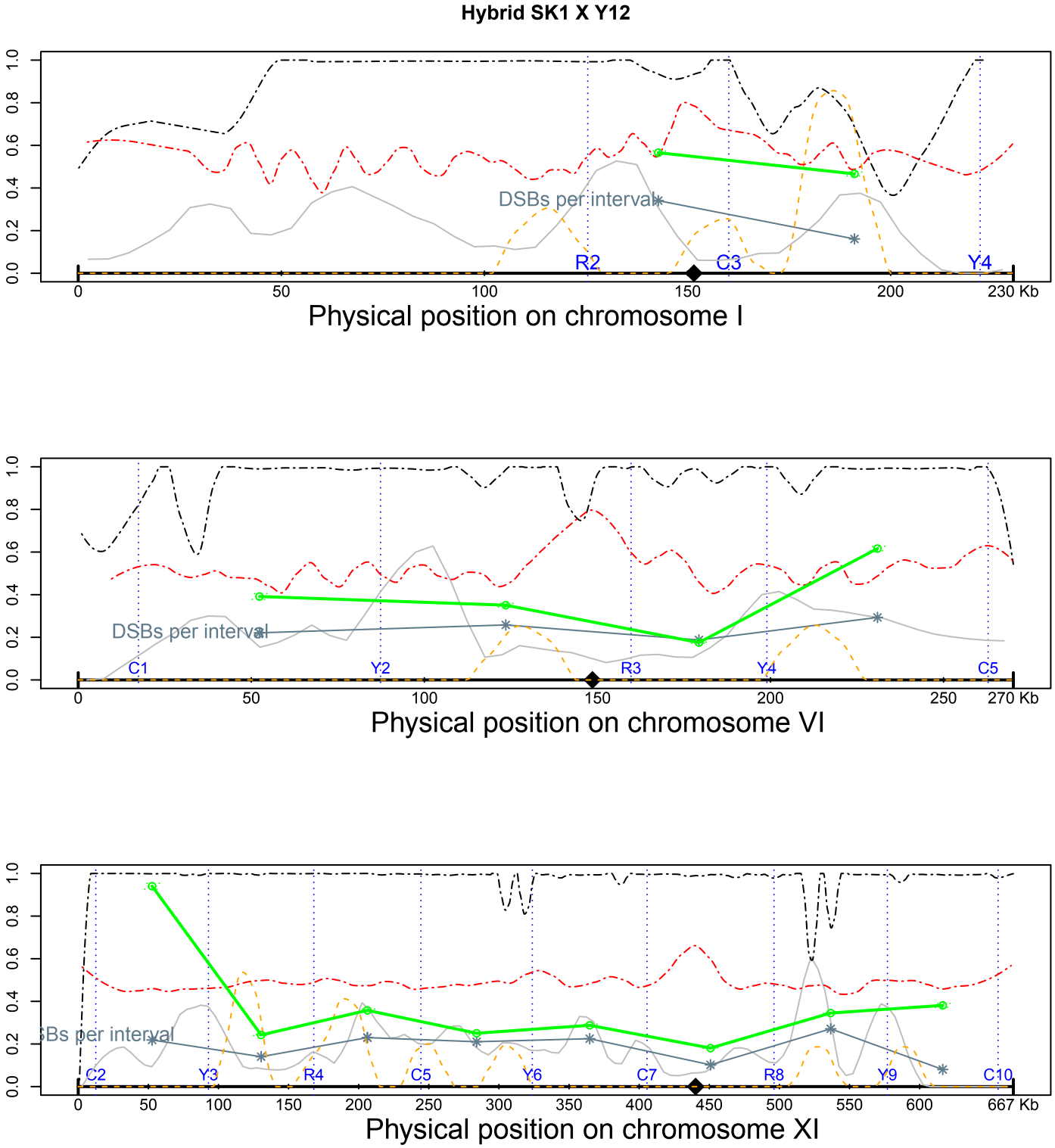

Hybrid SK1 X DBVPG6765
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
0.0
0.2
0.4
0.6
0.8
1.0
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

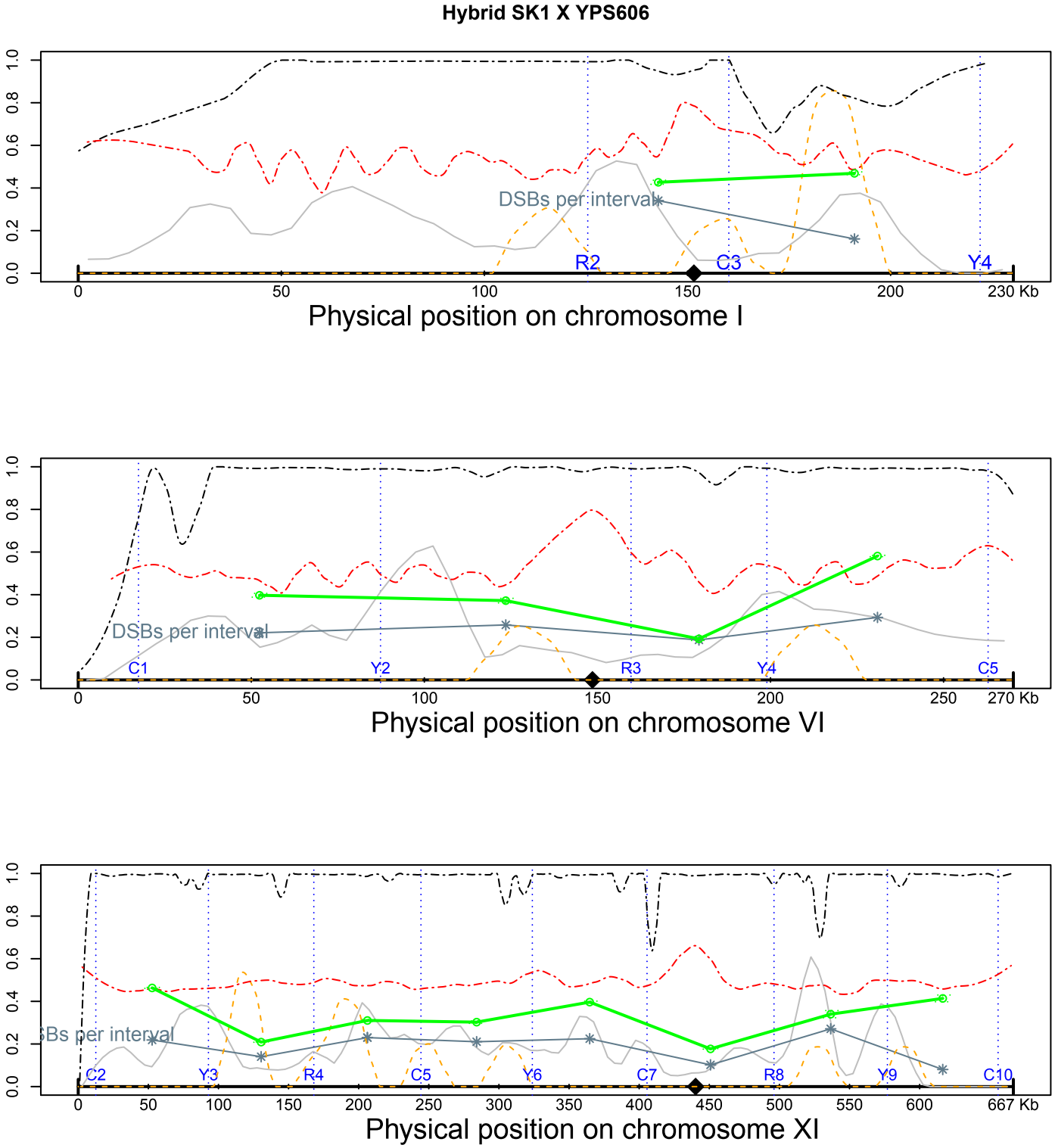

Hybrid SK1 X L_1374
0.0
0.2
0.4
0.6
0.8
1.0
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level

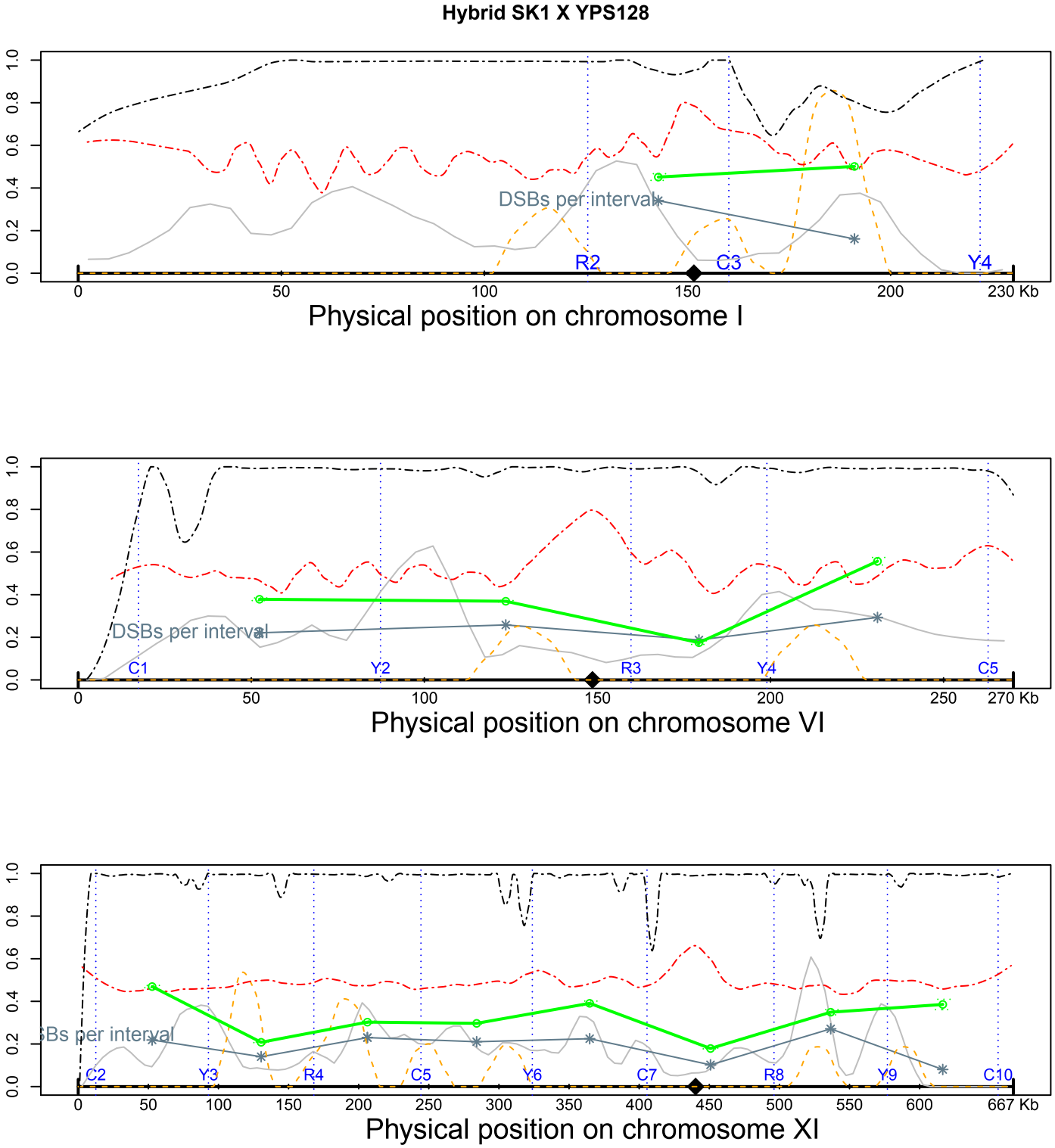

Hybrid SK1 X L_1528
0.0
0.2
0.4
0.6
0.8
1.0
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X DBVPG6044
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
0.0
0.2
0.4
0.6
0.8
1.0
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X NCYC110
DSBs per interval
R2
C3
Y4
0
50
100
150
200
230 Kb
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
0
50
100
150
200
250
270 Kb
Physical position on chromosome VI
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
0
50
100
150
200
250
300
350
400
450
500
550
600
667 Kb
Physical position on chromosome XI
0.0
0.2
0.4
0.6
0.8
1.0
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X Y12
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
DSBs per interval
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X YPS606
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
DSBs per interval
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level


Hybrid SK1 X YPS128
DSBs per interval
R2
C3
Y4
Physical position on chromosome I
DSBs per interval
C1
Y2
R3
Y4
C5
Physical position on chromosome VI
DSBs per interval
C2
Y3
R4
C5
Y6
C7
R8
Y9
C10
Physical position on chromosome XI
Recombination rate
DSB level
DSBs per interval
H3K4me3 level
Sequence similarity
Rec8 level