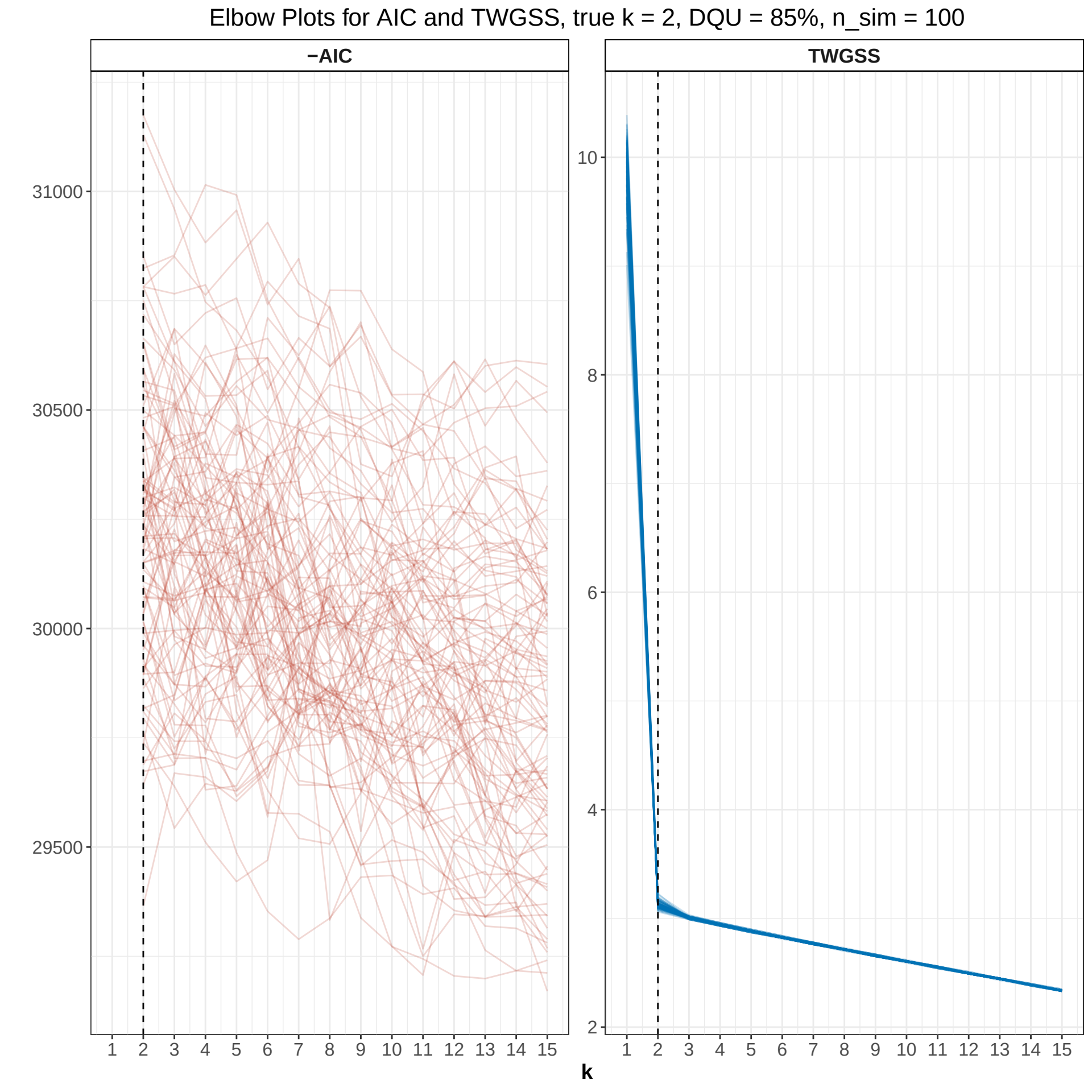
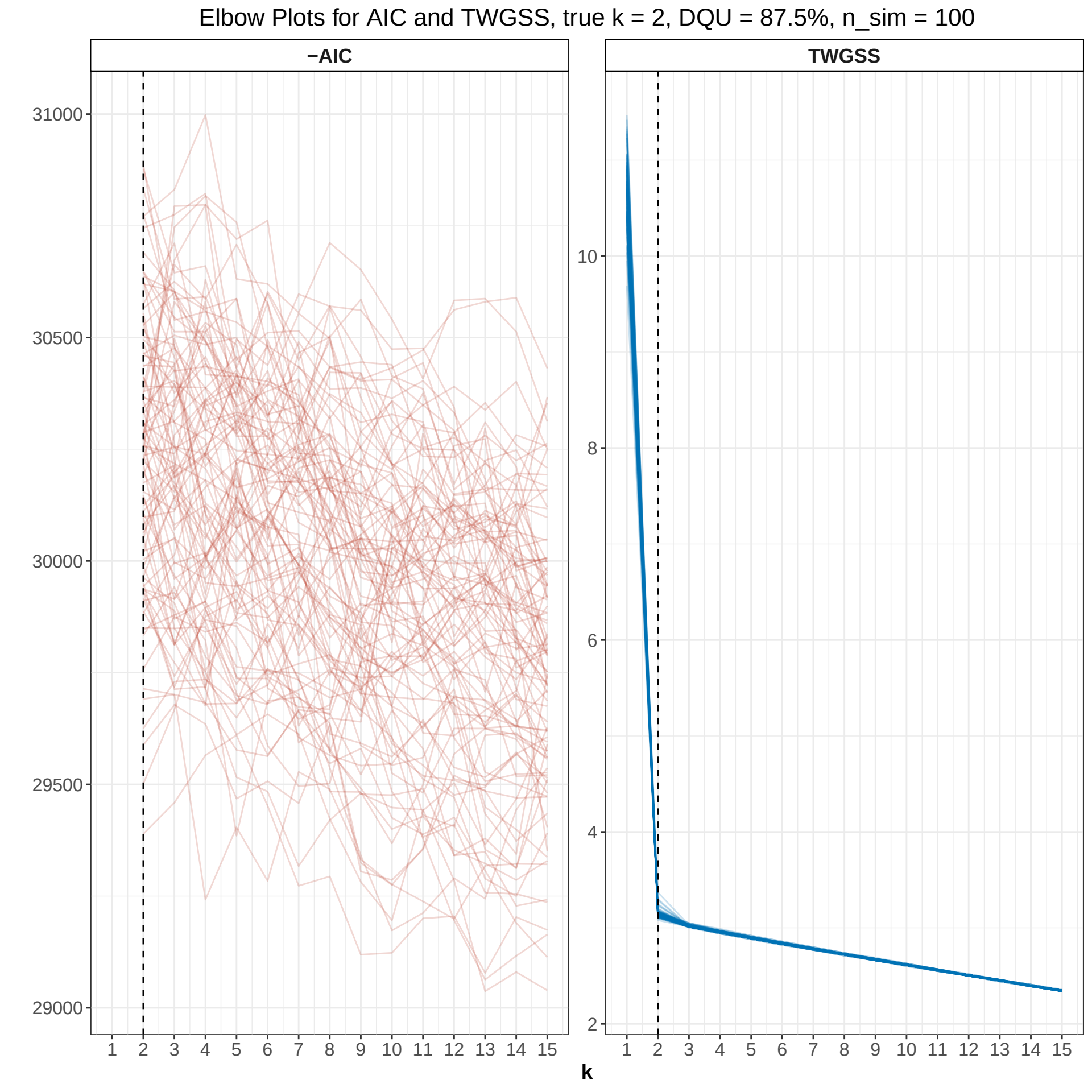

Elbow Plots for AIC and TWGSS, true k = 2, DQU = 85%, n_sim = 100
−AIC
TWGSS
31000
30500
30000
29500
10
8
6
4
2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 2, DQU = 87.5%, n_sim = 100
−AIC
TWGSS
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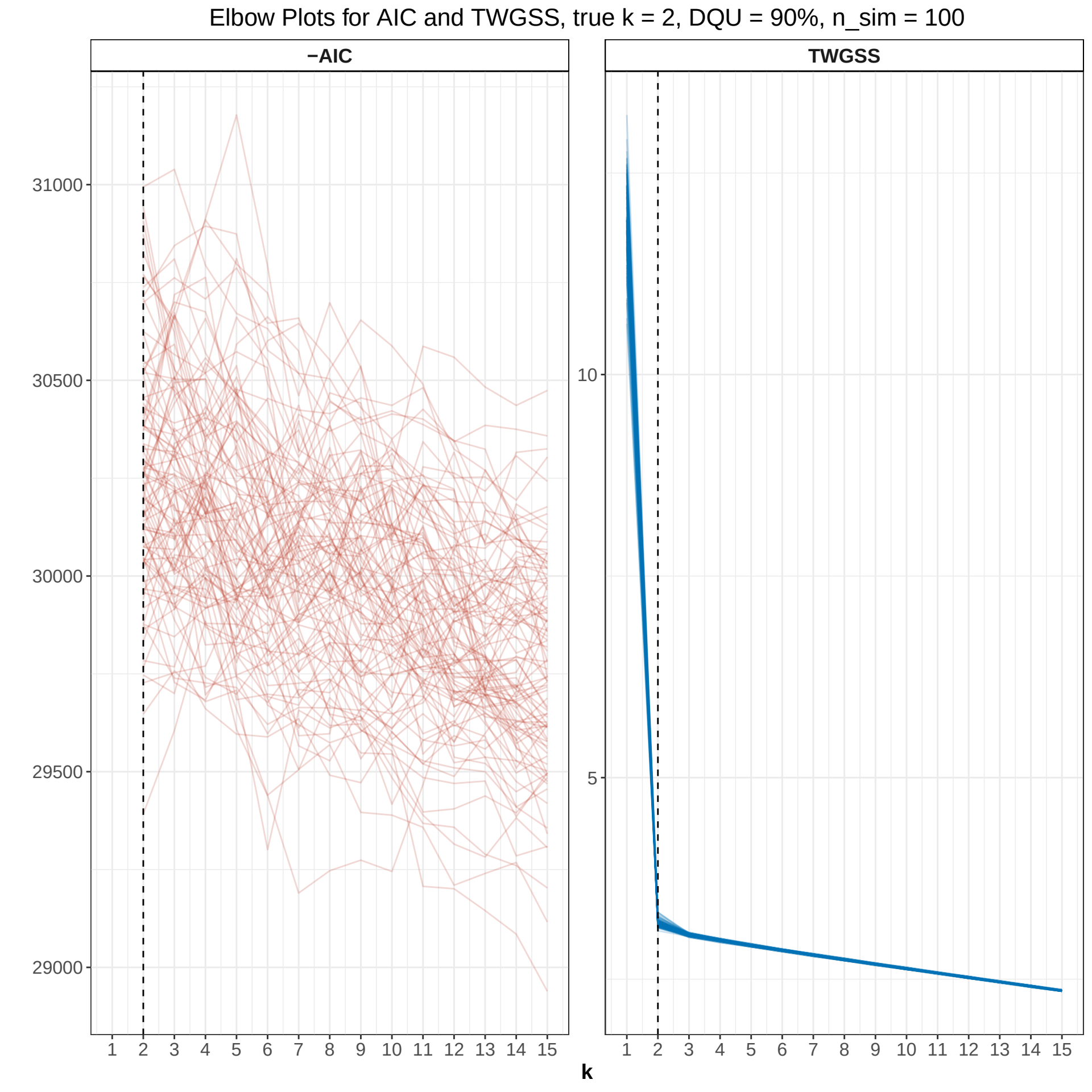
30000
29500
29000
10
8
6
4
2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 2, DQU = 90%, n_sim = 100
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TWGSS
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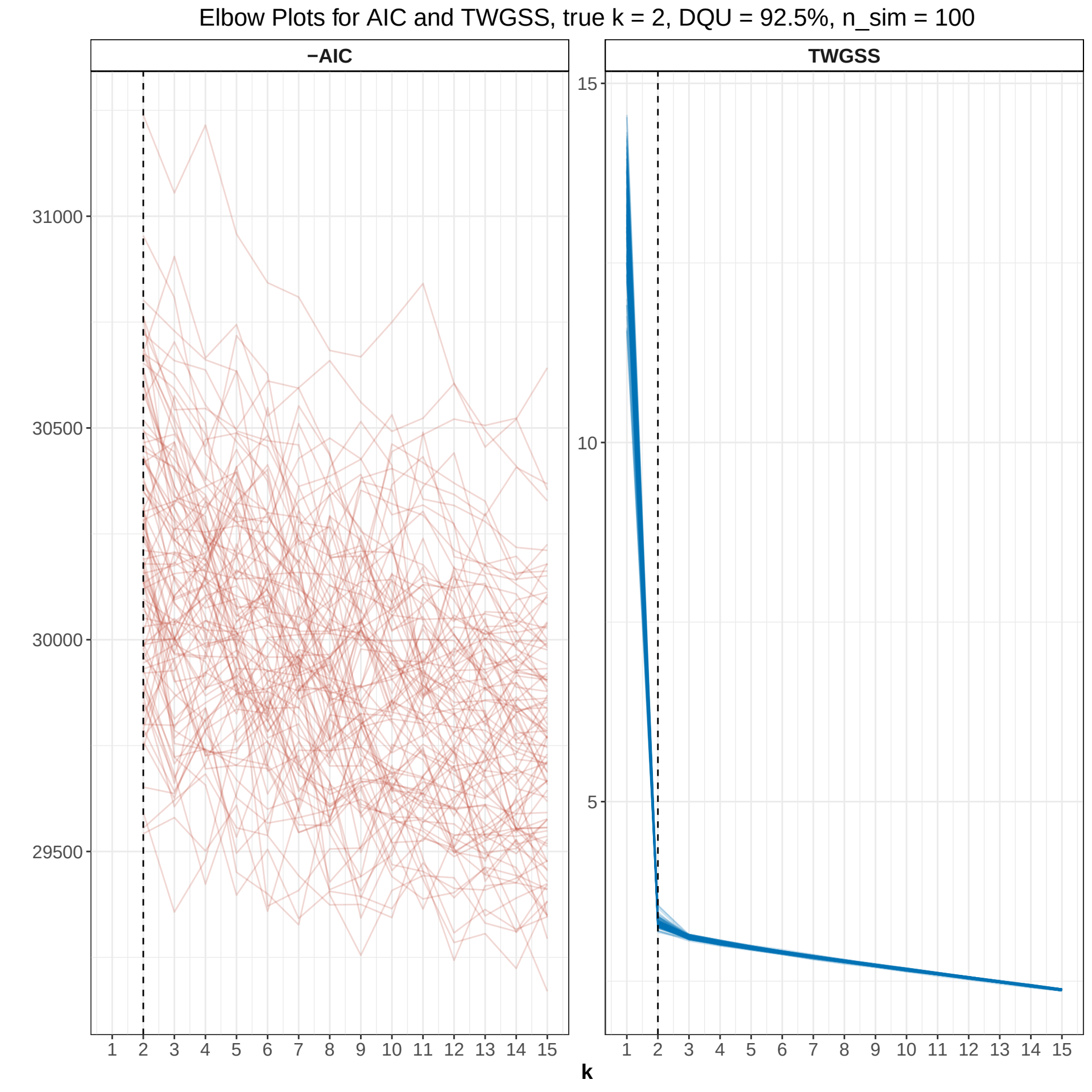
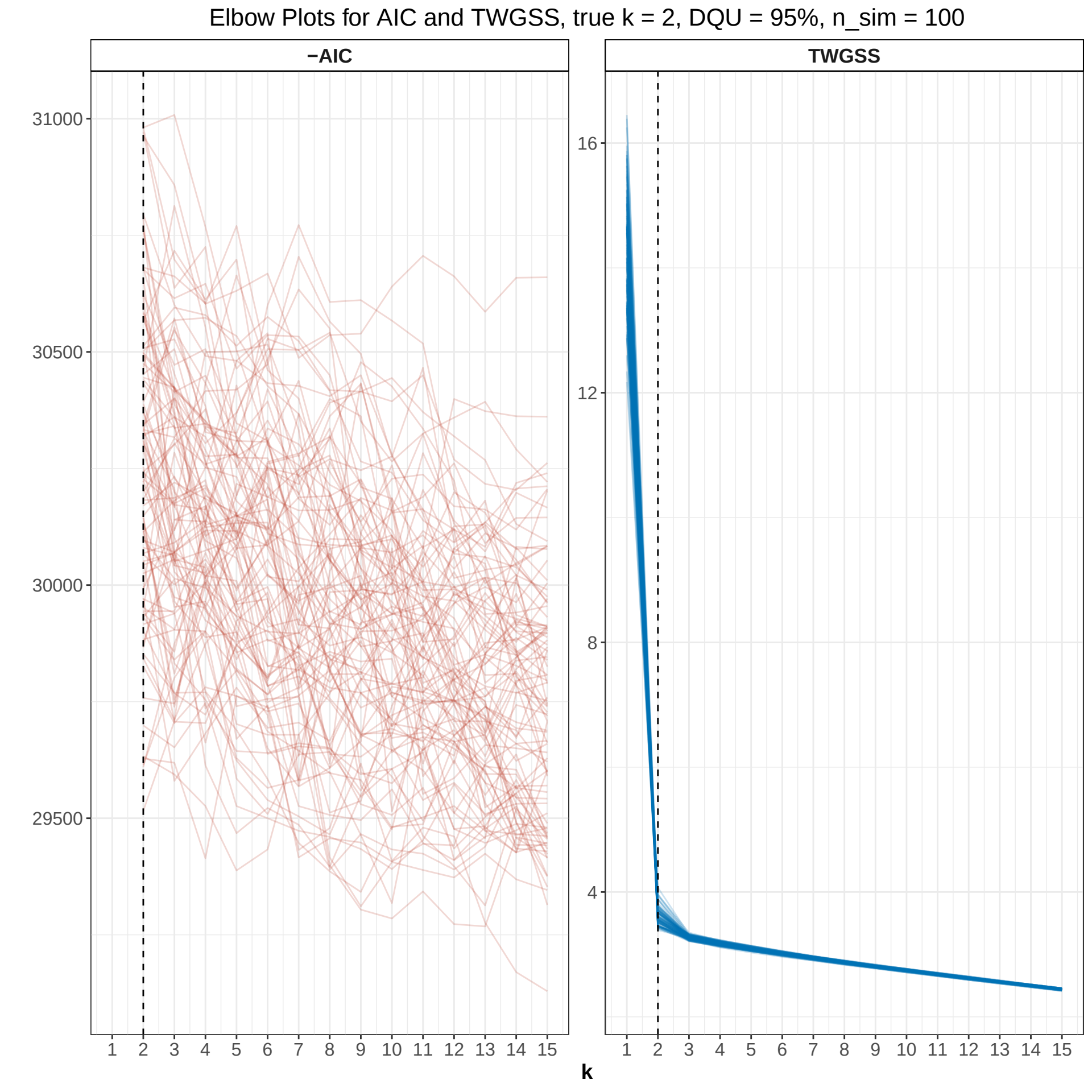
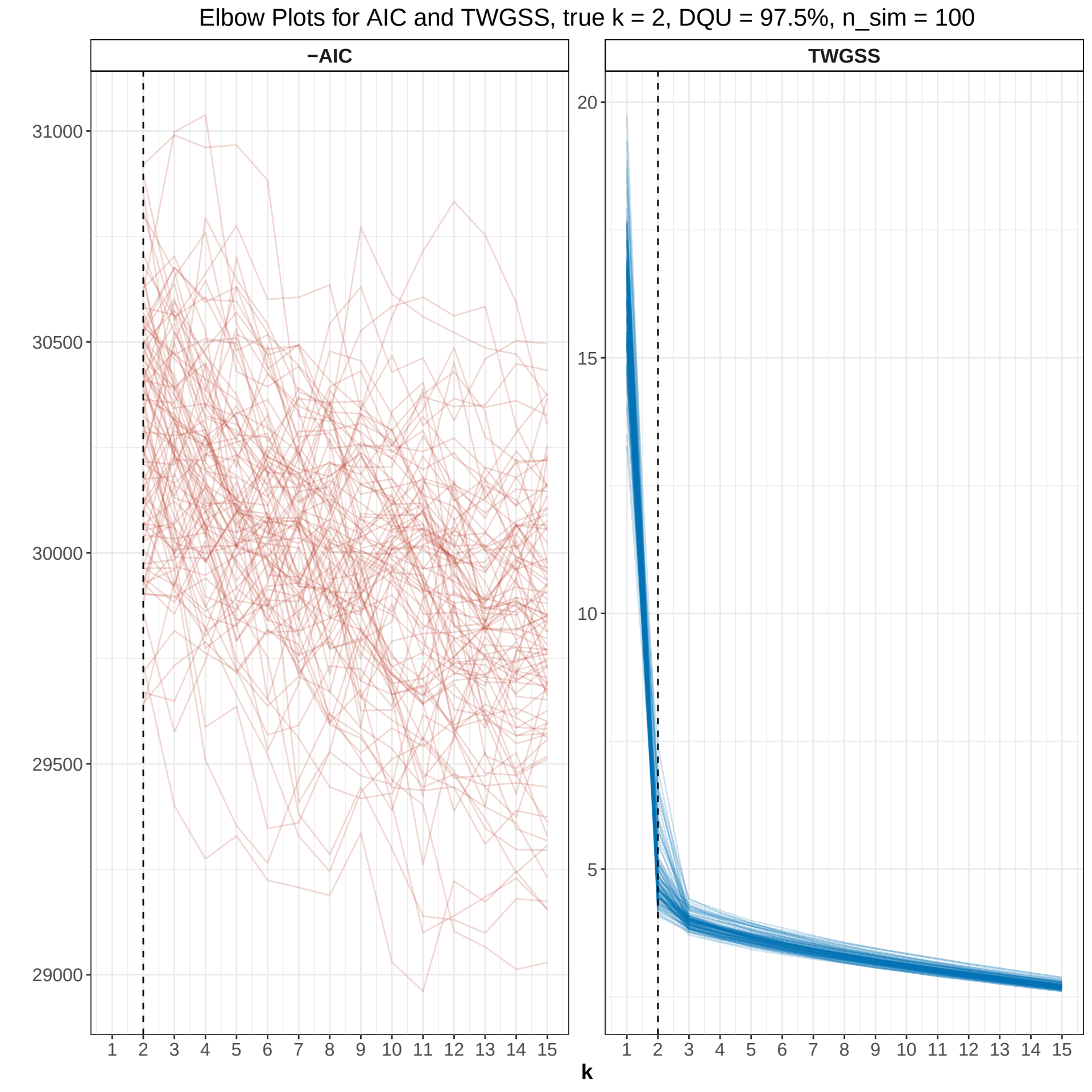
30000
29500
29000
10
5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 2, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
31000
30500
30000
29500
15
10
5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 2, DQU = 95%, n_sim = 100
−AIC
TWGSS
31000
30500
30000
29500
16
12
8
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 2, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
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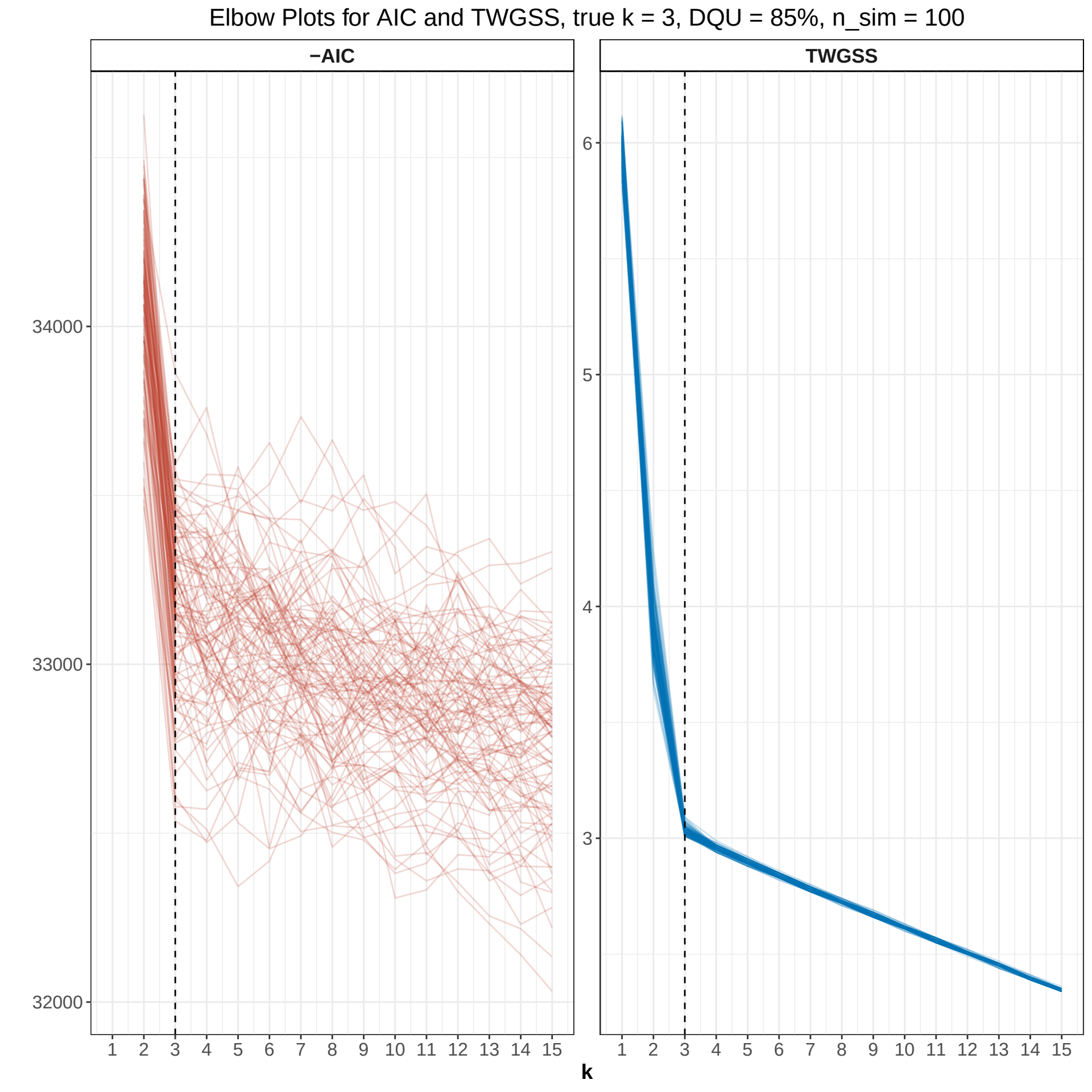
30500
30000
29500
29000
20
15
10
5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 3, DQU = 85%, n_sim = 100
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TWGSS
34000
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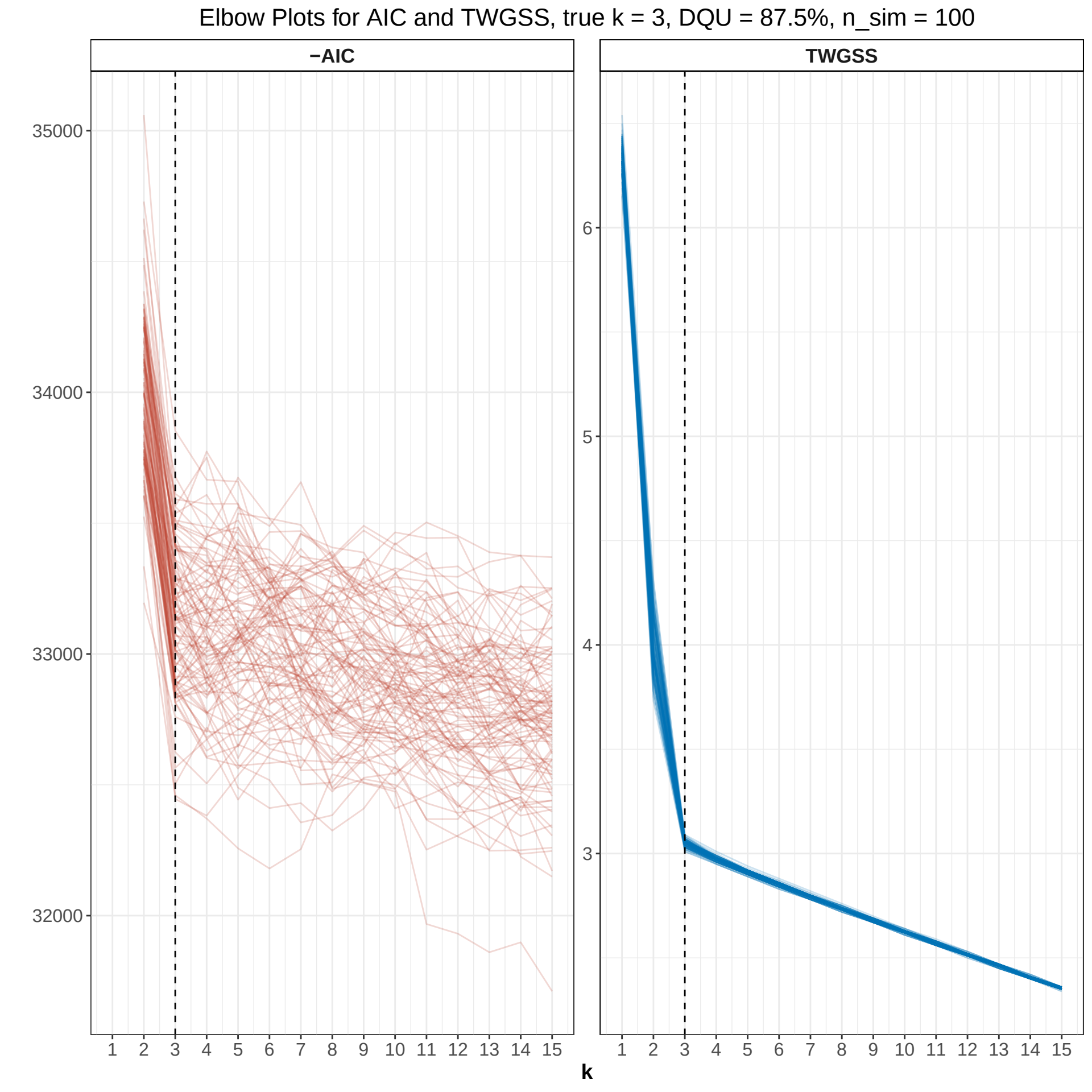
32000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 3, DQU = 87.5%, n_sim = 100
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TWGSS
35000
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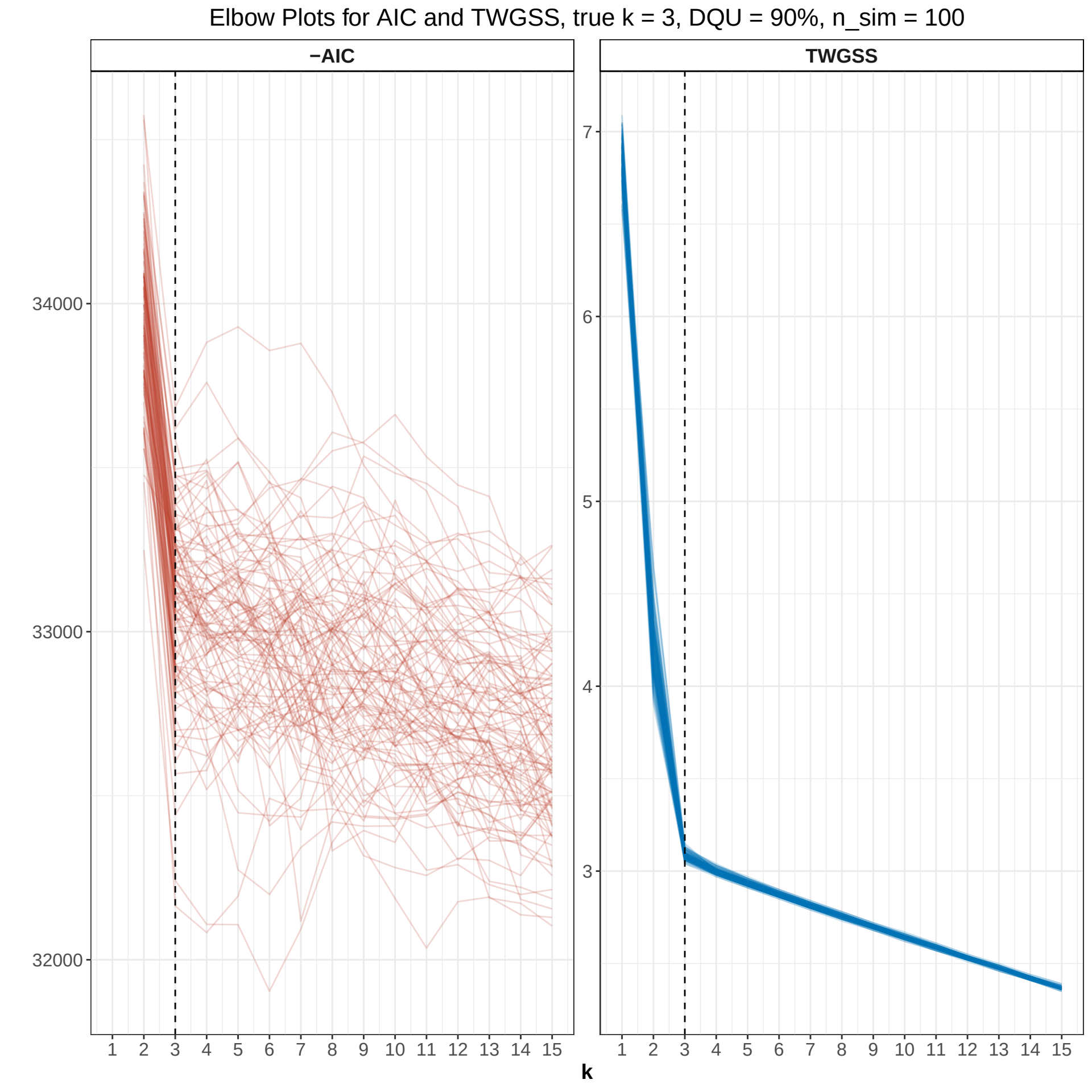
33000
32000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 3, DQU = 90%, n_sim = 100
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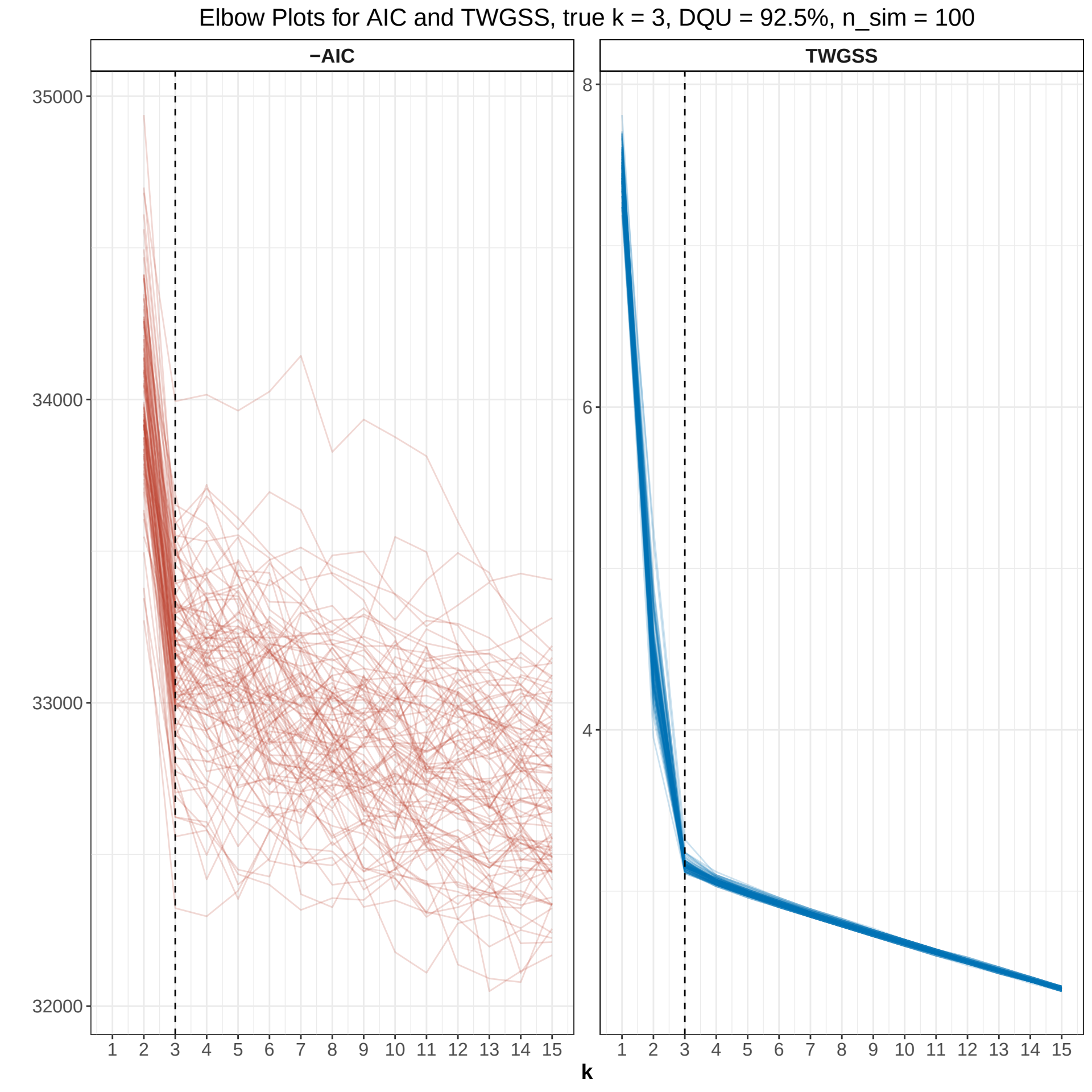
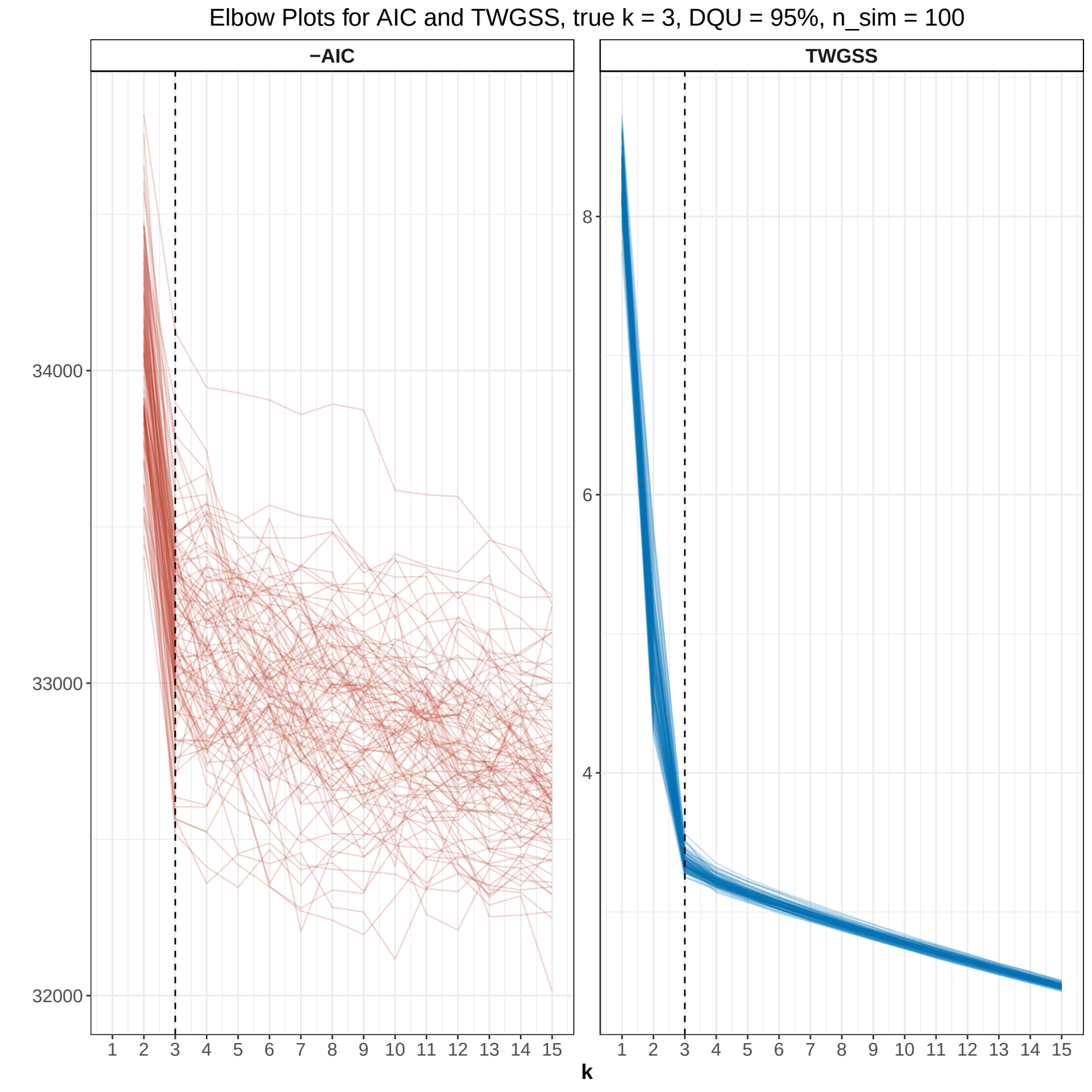
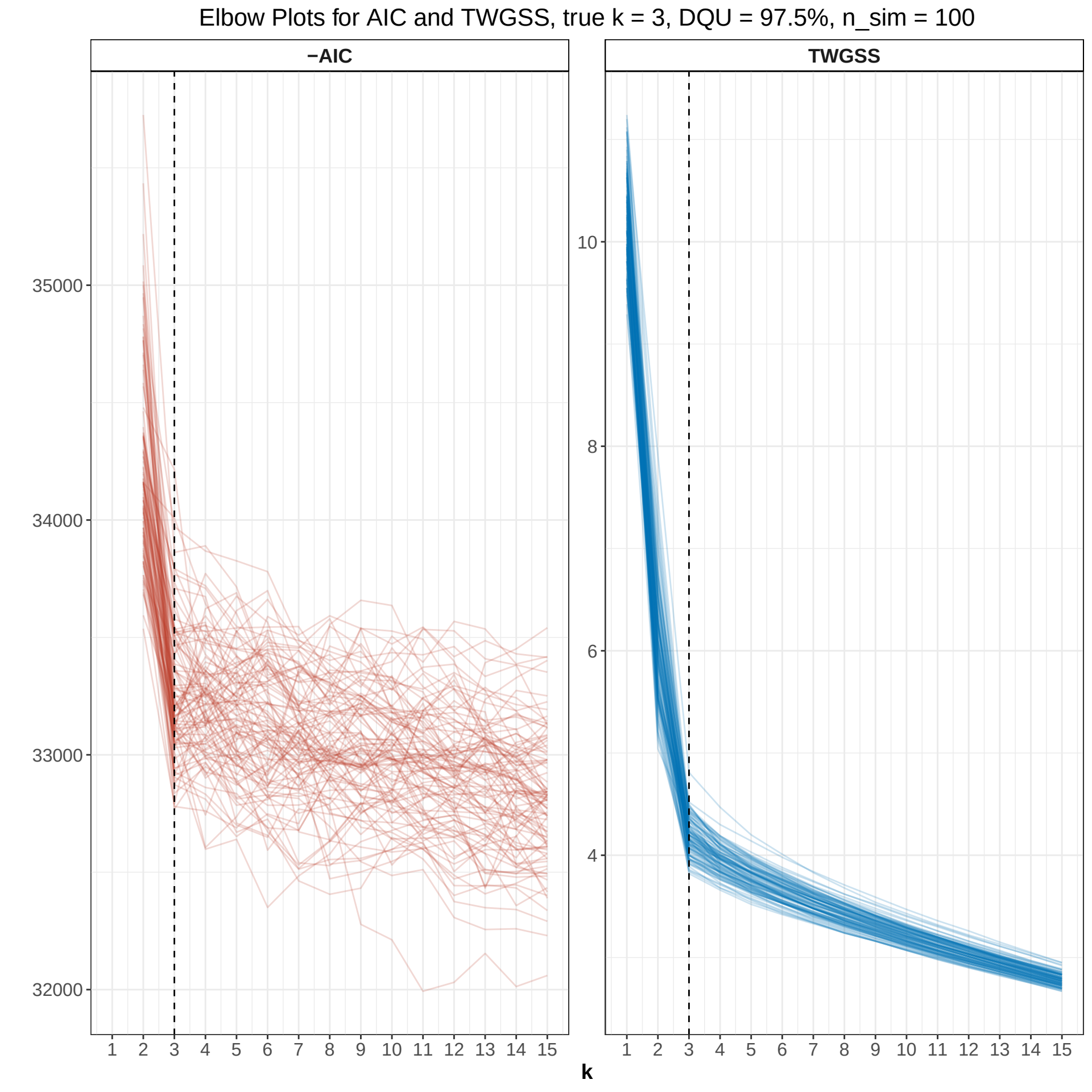
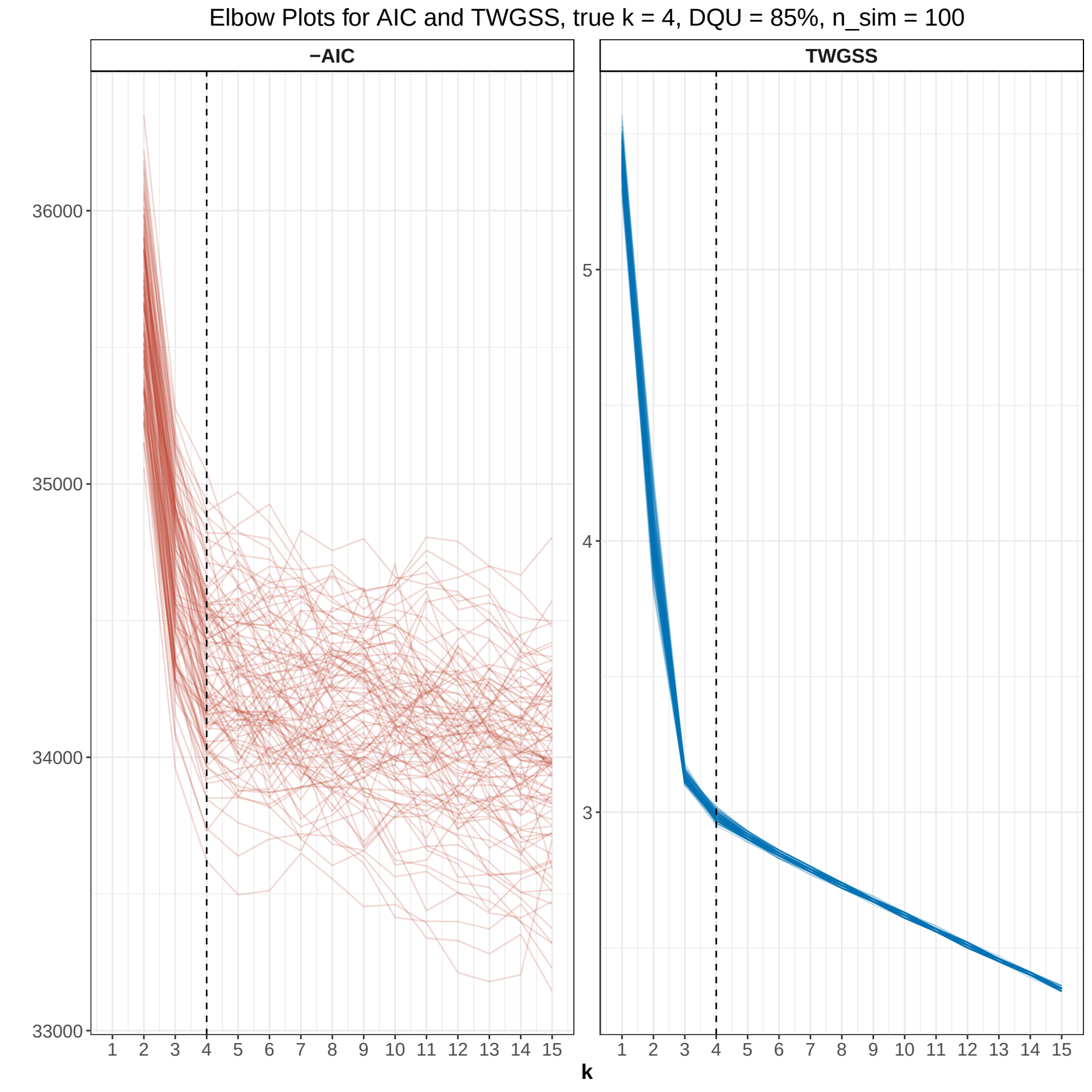
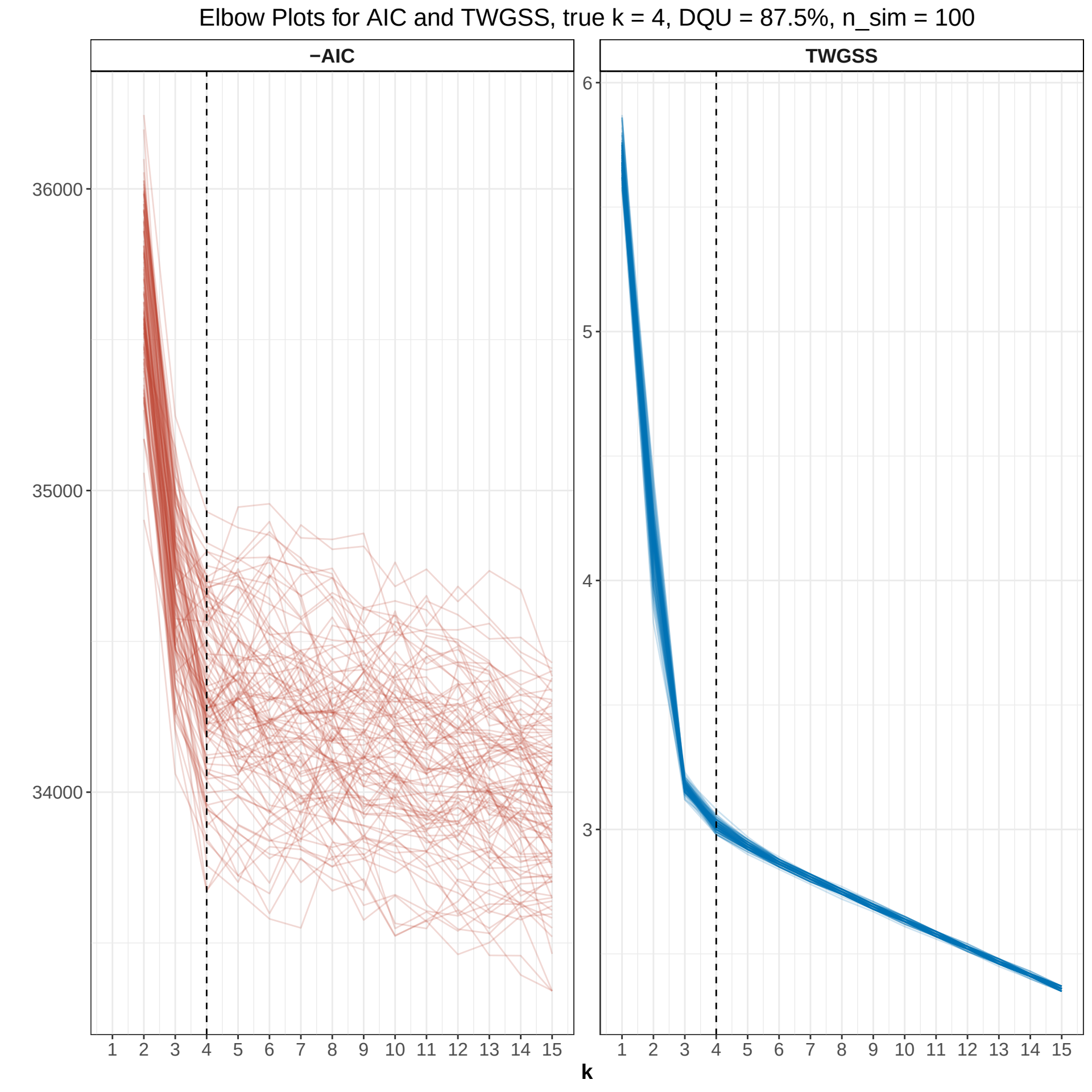
TWGSS
34000
33000
32000
7
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k

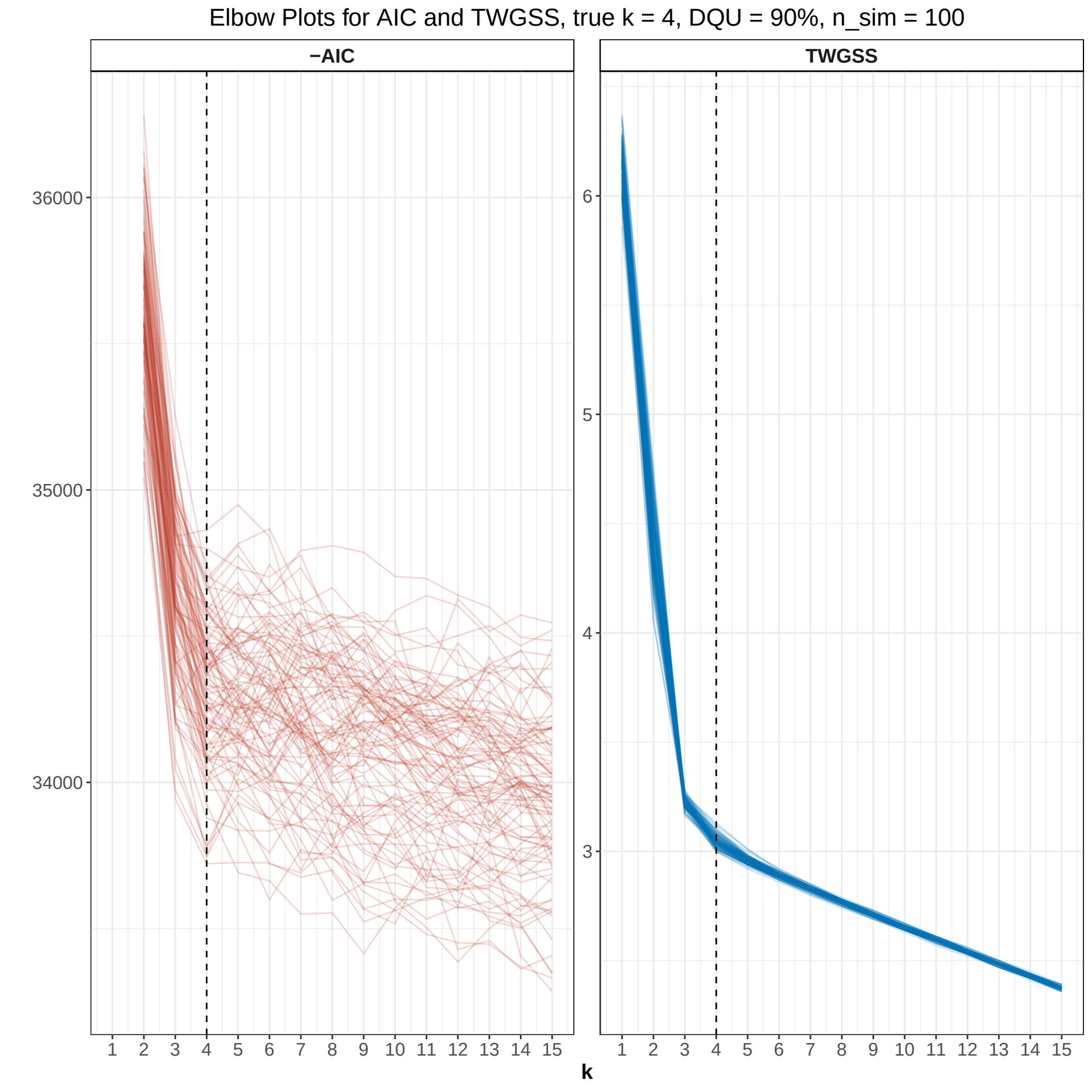

Elbow Plots for AIC and TWGSS, true k = 3, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
35000
34000
33000
32000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k

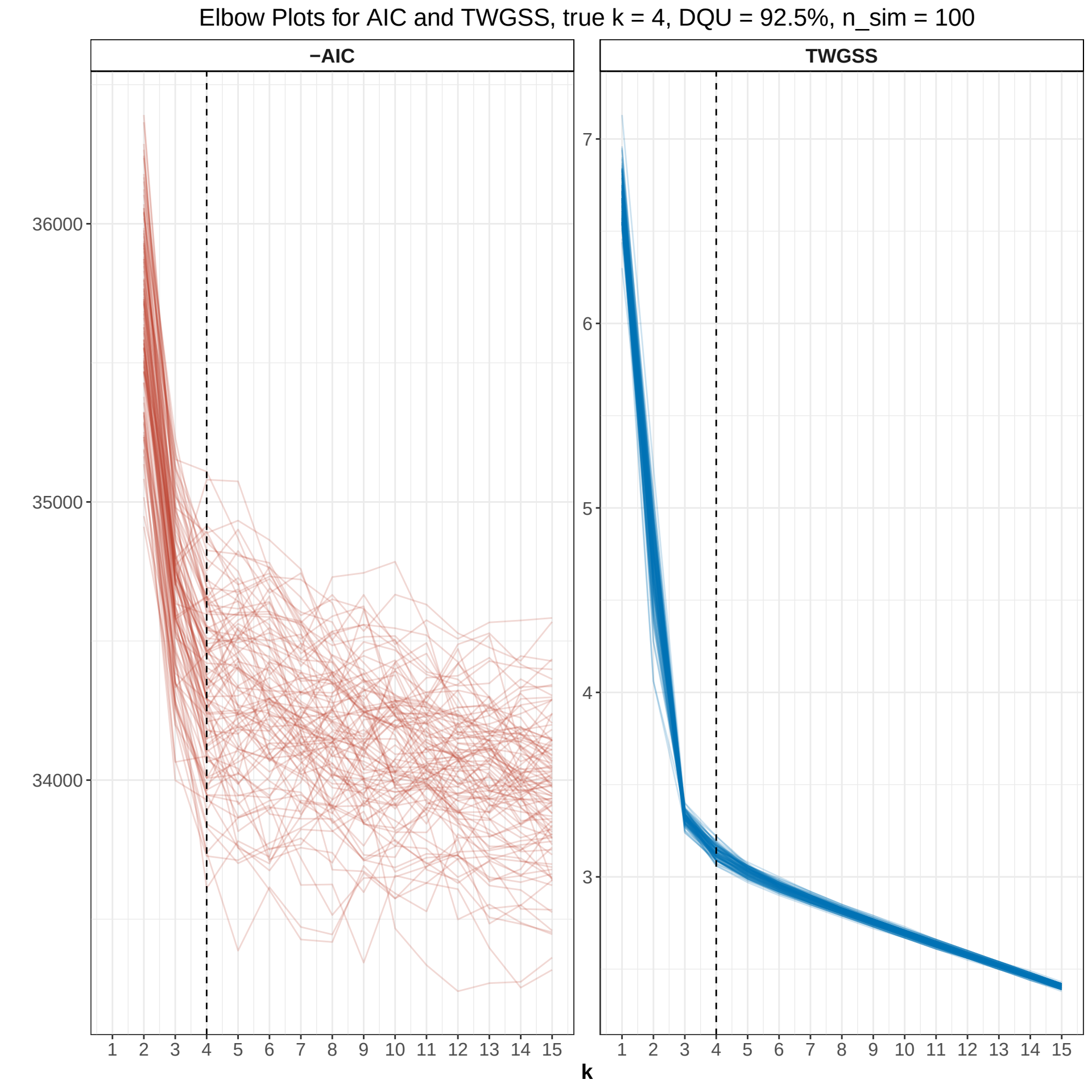

Elbow Plots for AIC and TWGSS, true k = 3, DQU = 95%, n_sim = 100
−AIC
TWGSS
34000
33000
32000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k

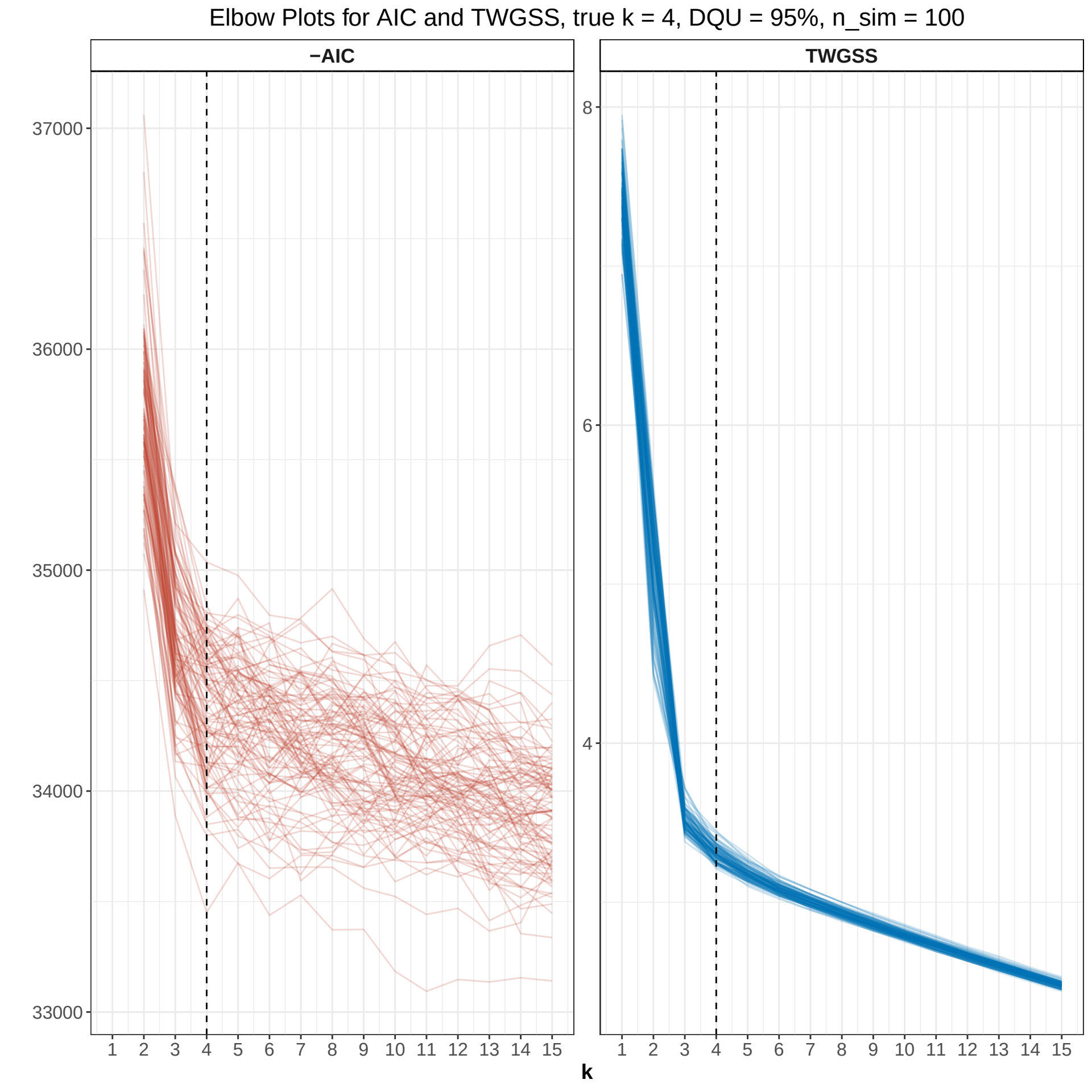

Elbow Plots for AIC and TWGSS, true k = 3, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
35000
34000
33000
32000
10
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 4, DQU = 85%, n_sim = 100
−AIC
TWGSS
36000
35000
34000
33000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 4, DQU = 87.5%, n_sim = 100
−AIC
TWGSS
36000
35000
34000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 4, DQU = 90%, n_sim = 100
−AIC
TWGSS
36000
35000
34000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 4, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
36000
35000
34000
7
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 4, DQU = 95%, n_sim = 100
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TWGSS
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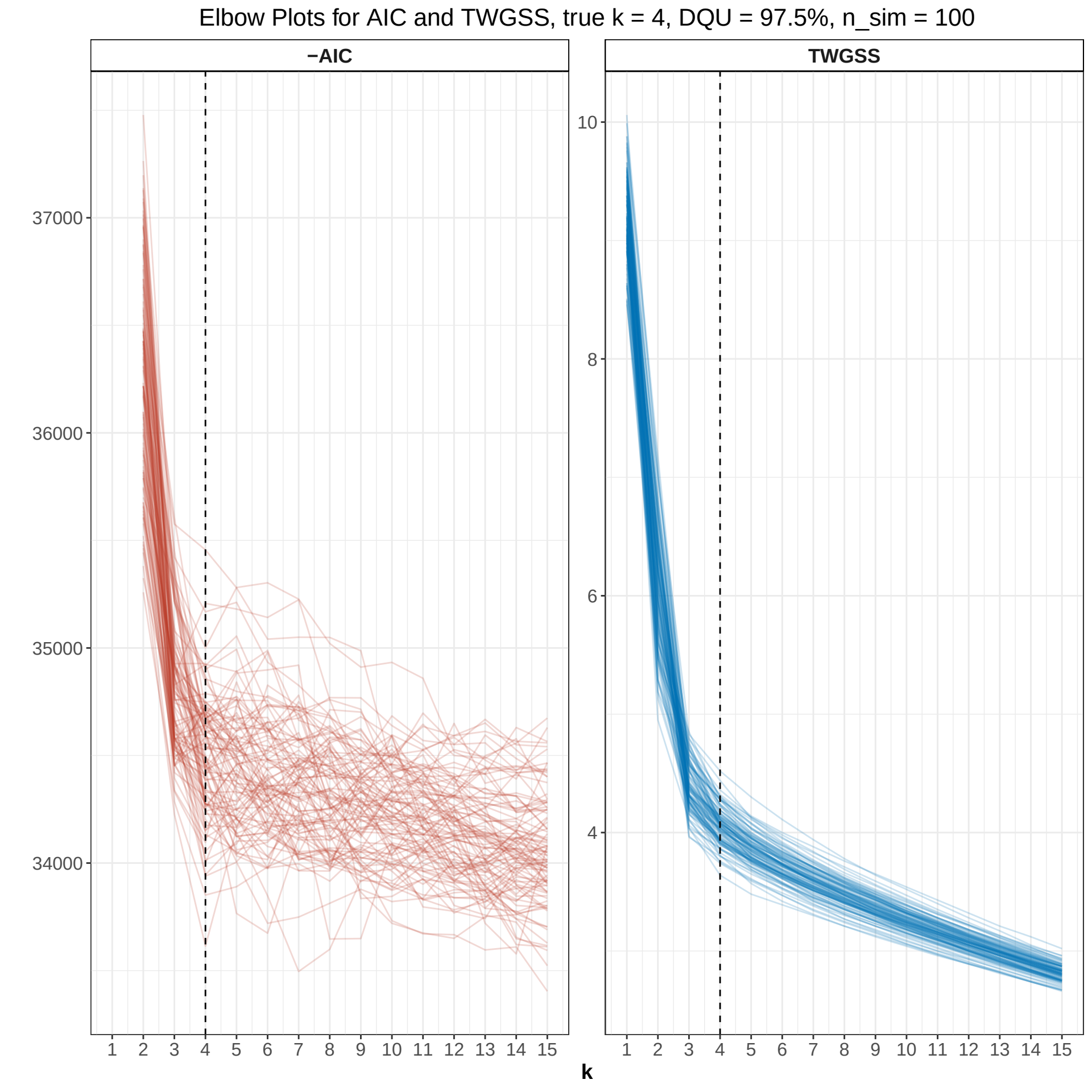
36000
35000
34000
33000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 4, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
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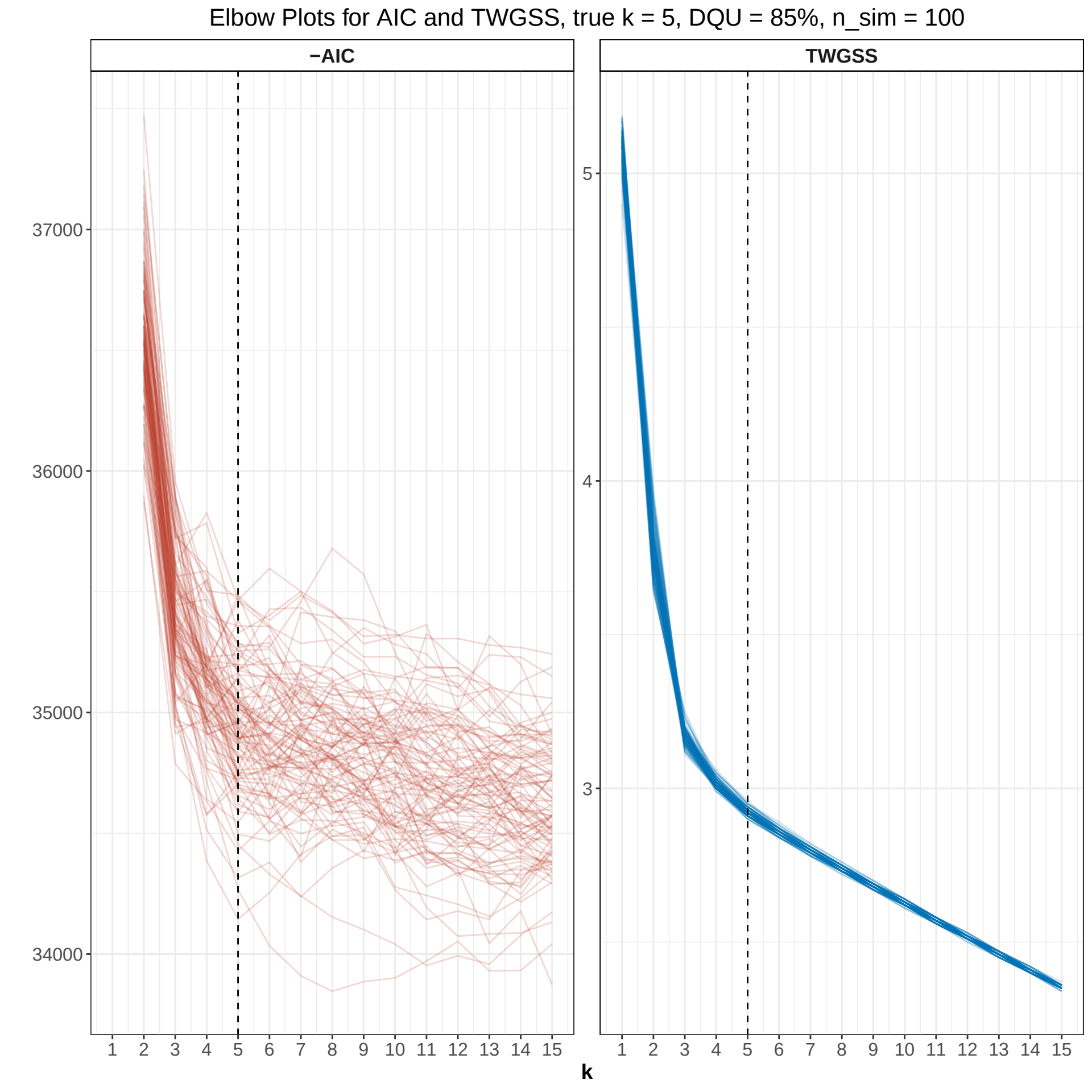
36000
35000
34000
10
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 5, DQU = 85%, n_sim = 100
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TWGSS
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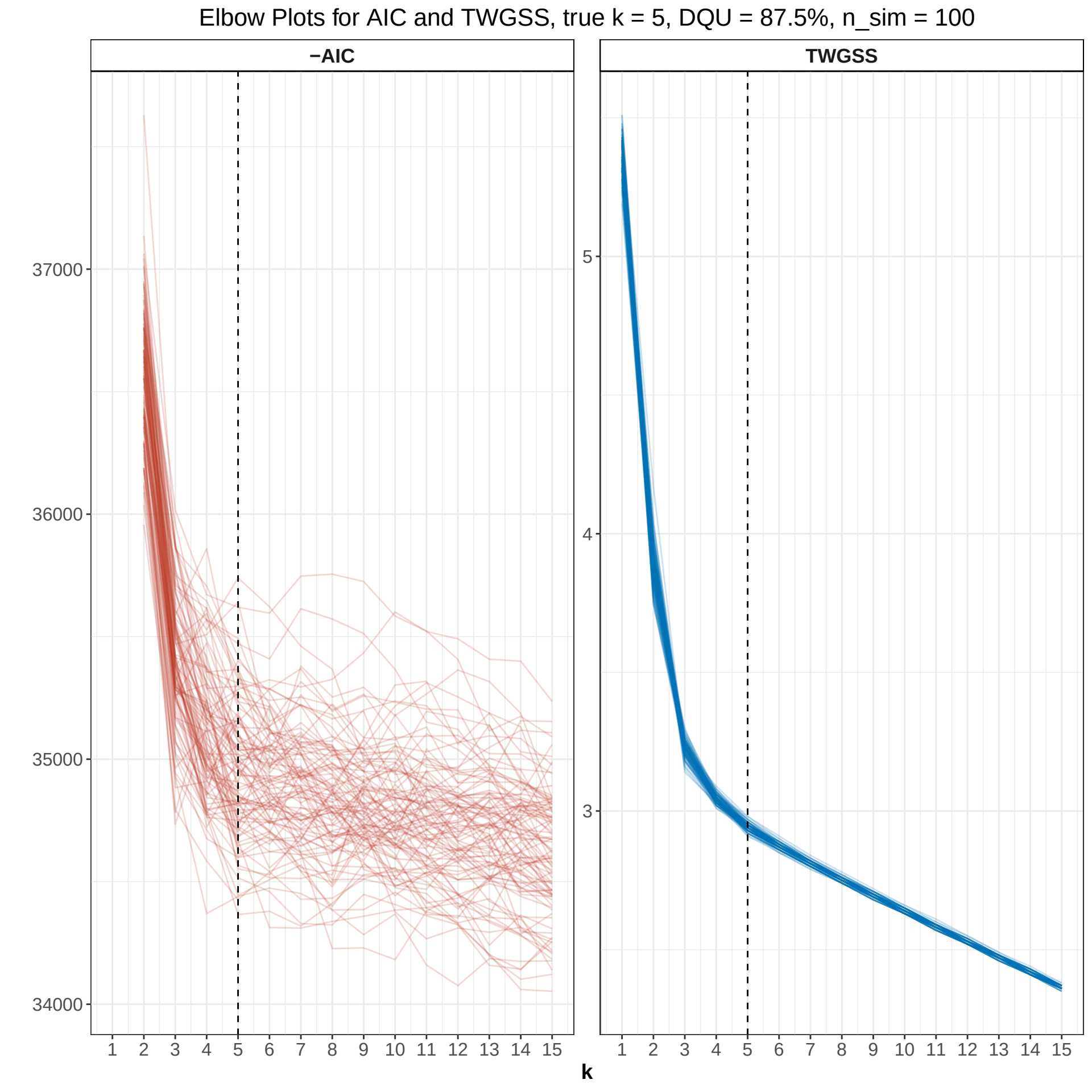
36000
35000
34000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 5, DQU = 87.5%, n_sim = 100
−AIC
TWGSS
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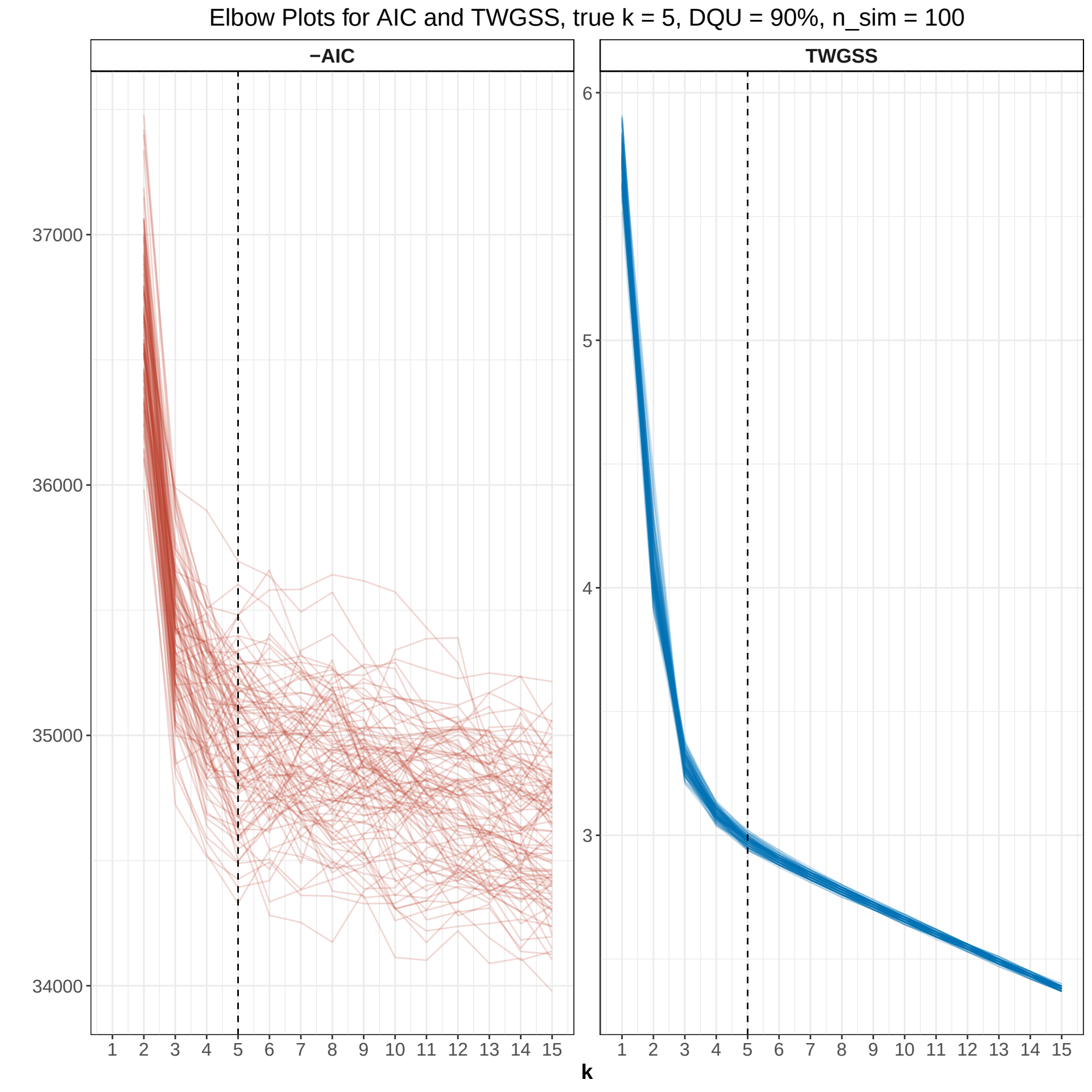
36000
35000
34000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 5, DQU = 90%, n_sim = 100
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TWGSS
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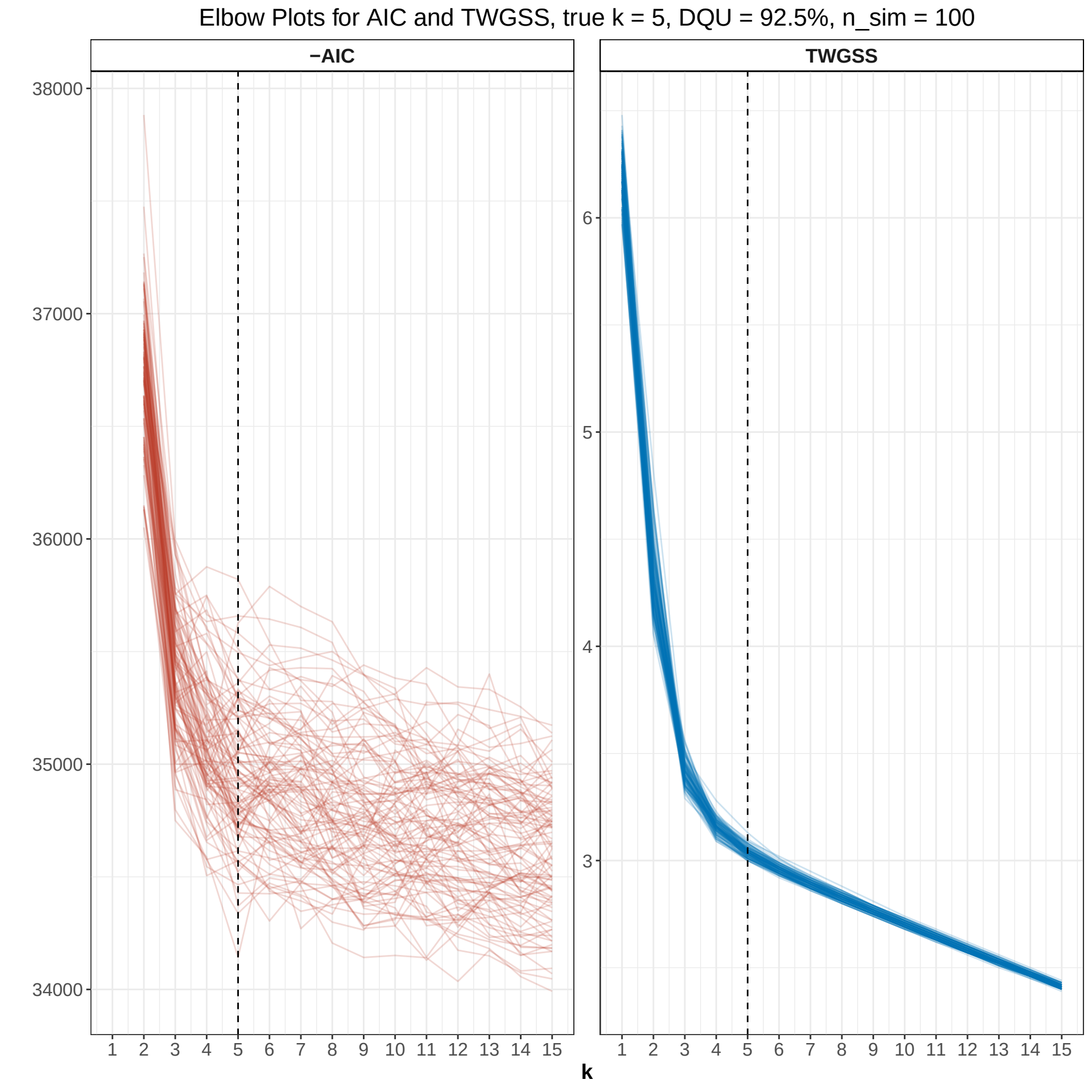
36000
35000
34000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 5, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
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36000
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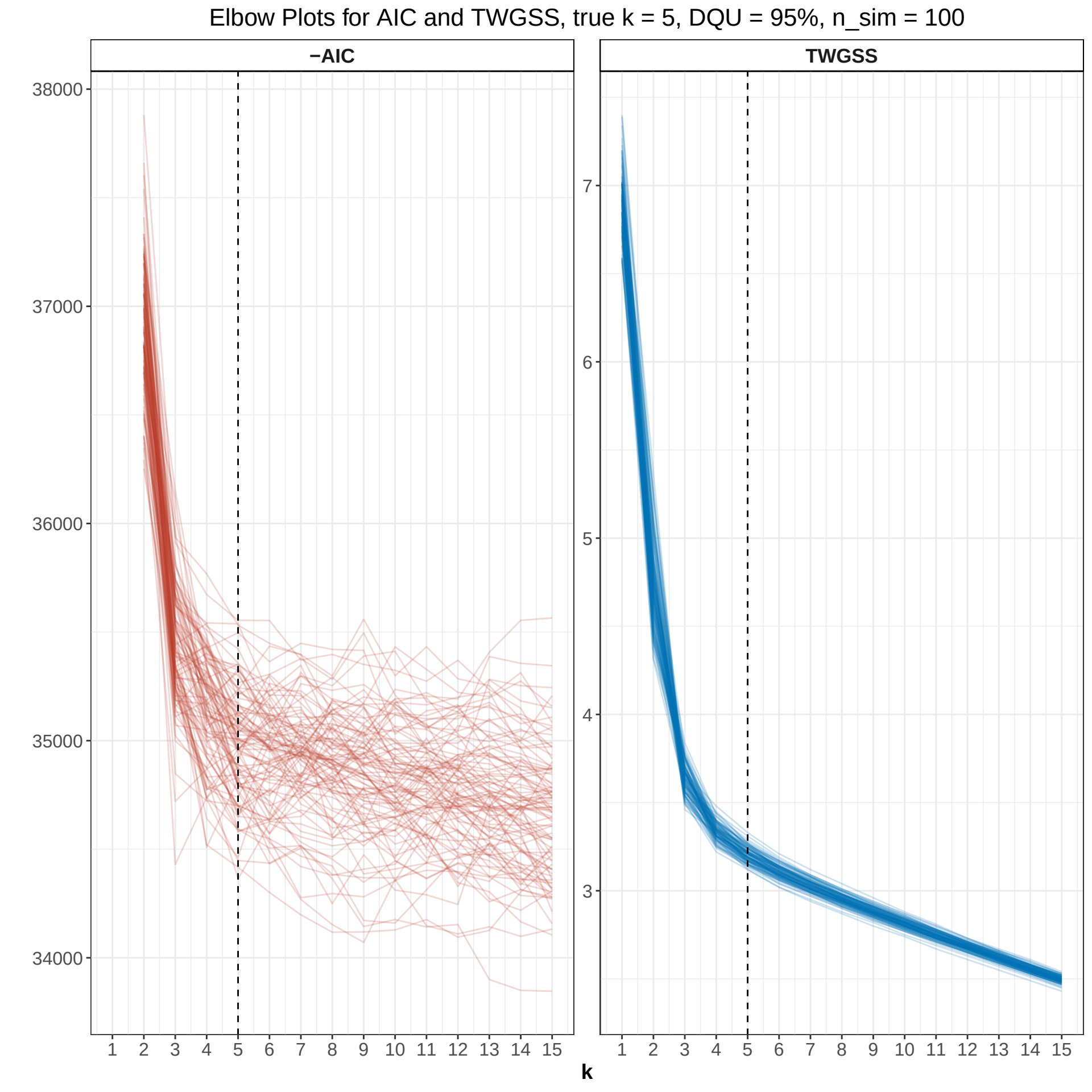
34000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 5, DQU = 95%, n_sim = 100
−AIC
TWGSS
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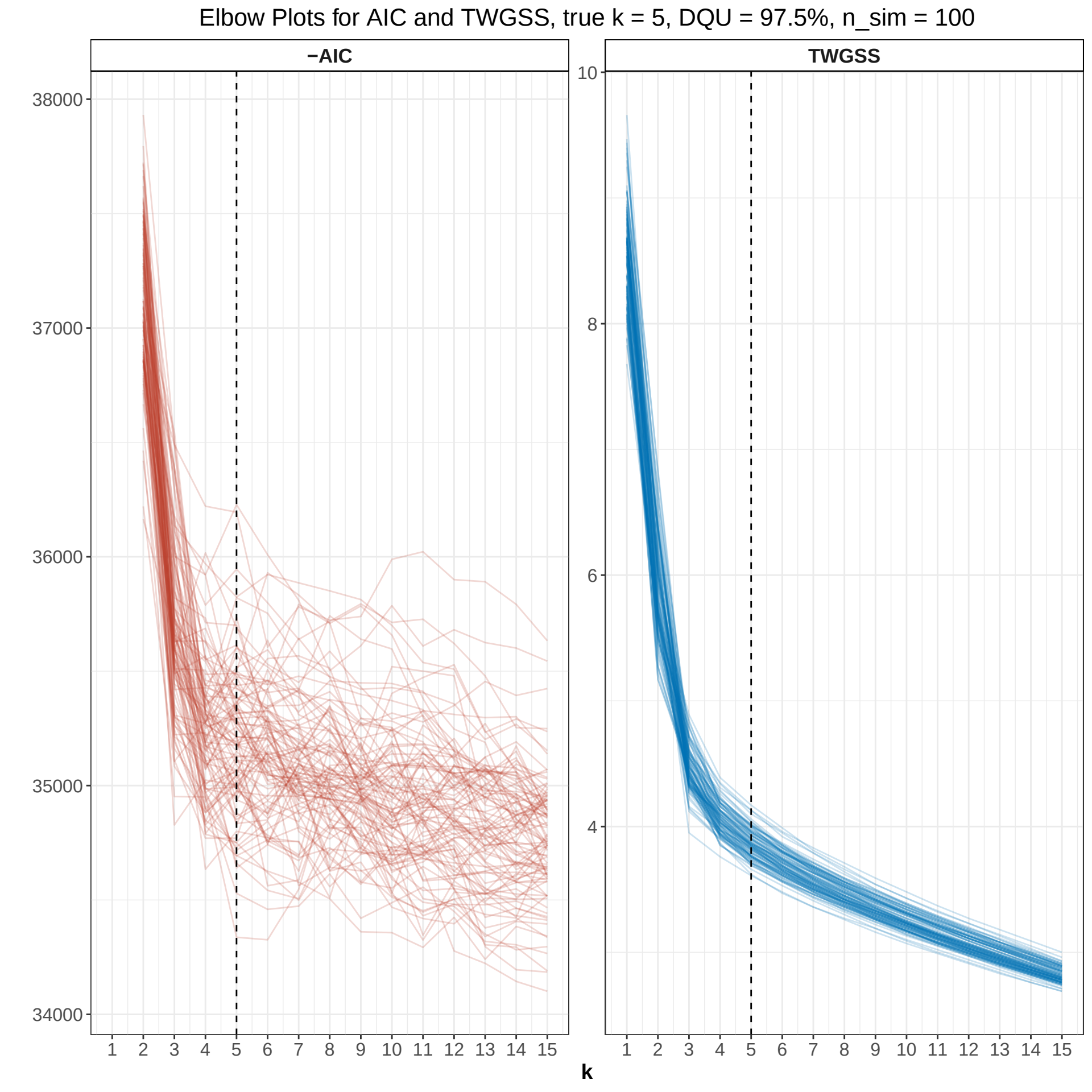
35000
34000
7
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 5, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
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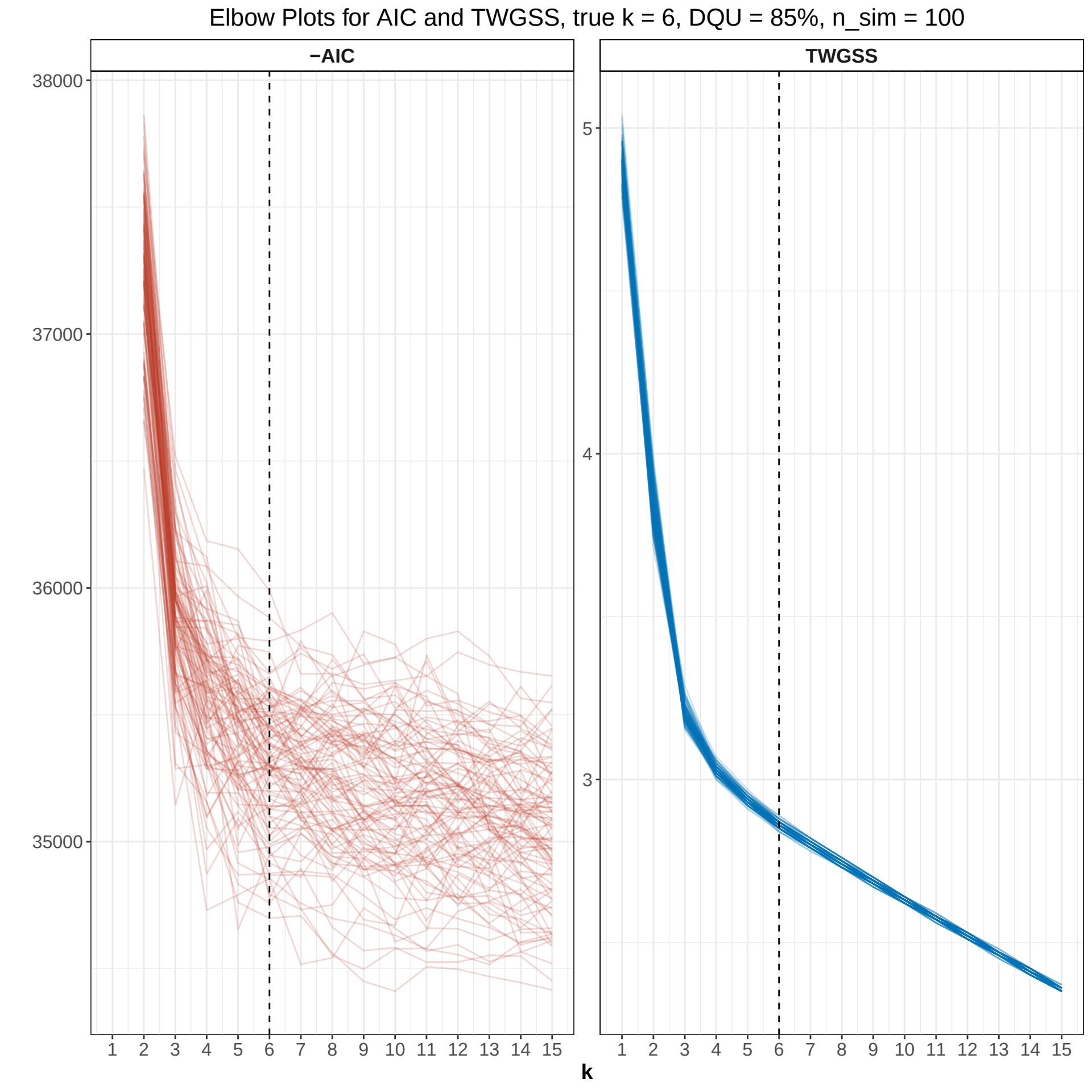
37000
36000
35000
34000
10
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 6, DQU = 85%, n_sim = 100
−AIC
TWGSS
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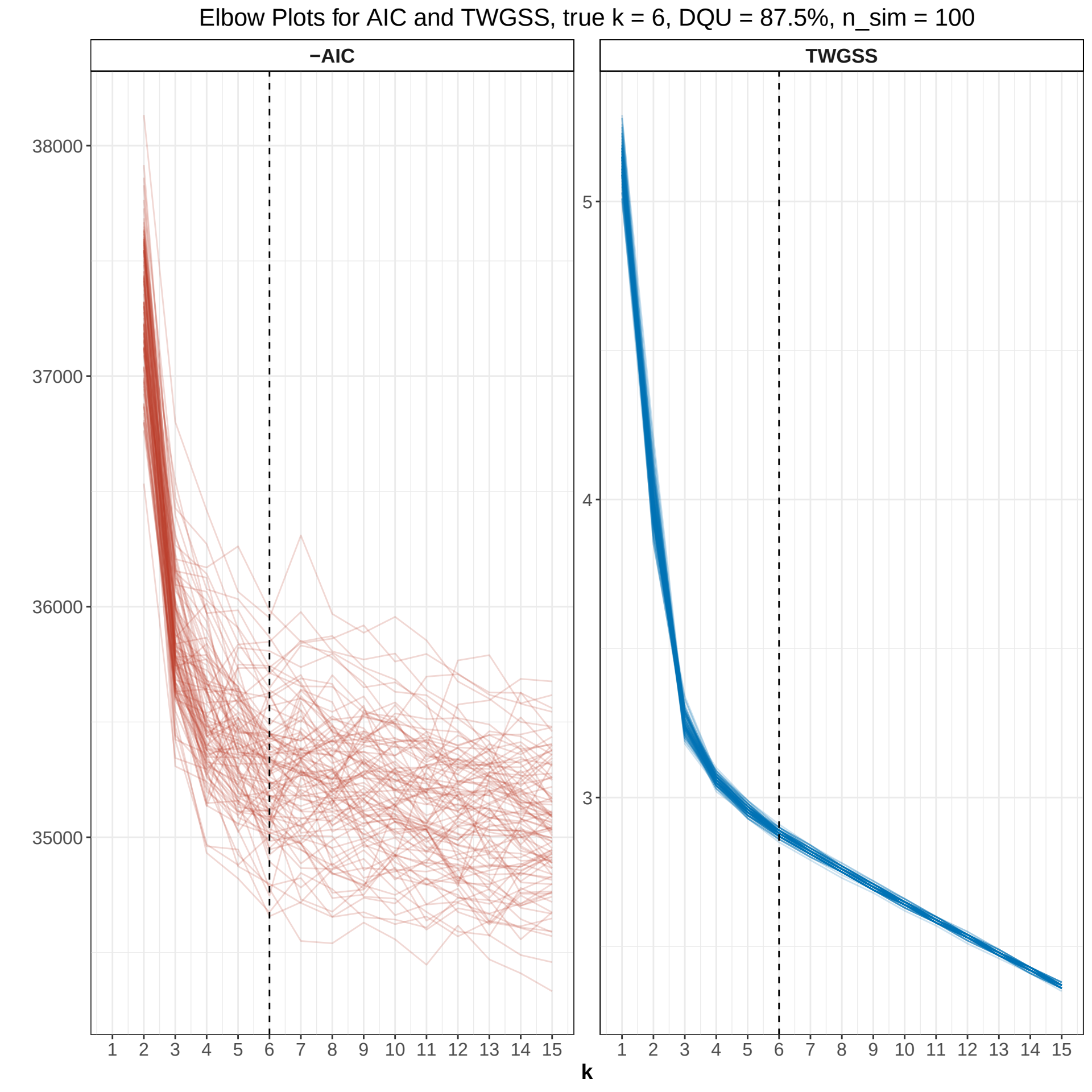
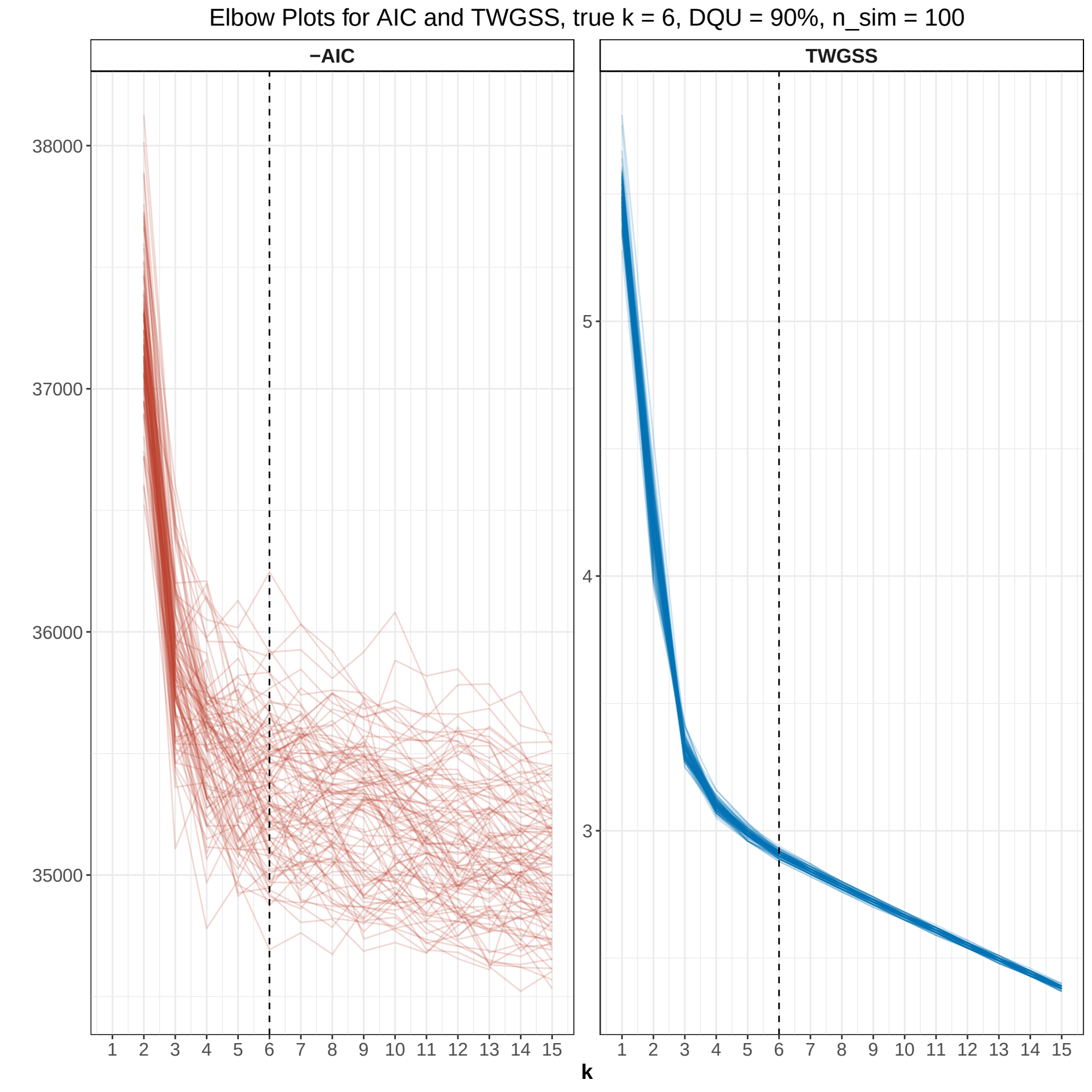
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 6, DQU = 87.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 6, DQU = 90%, n_sim = 100
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TWGSS
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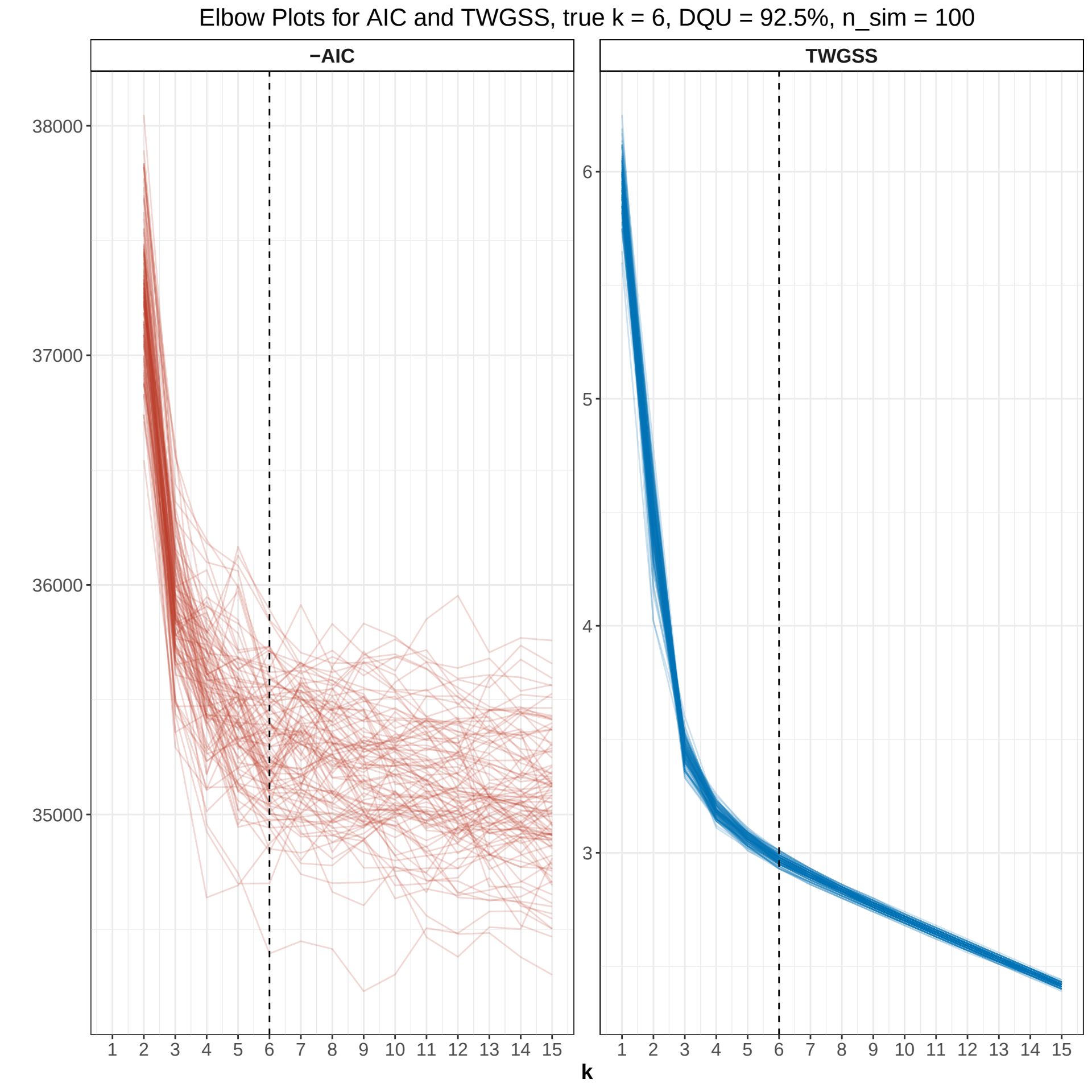
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 6, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
38000
37000
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35000
6
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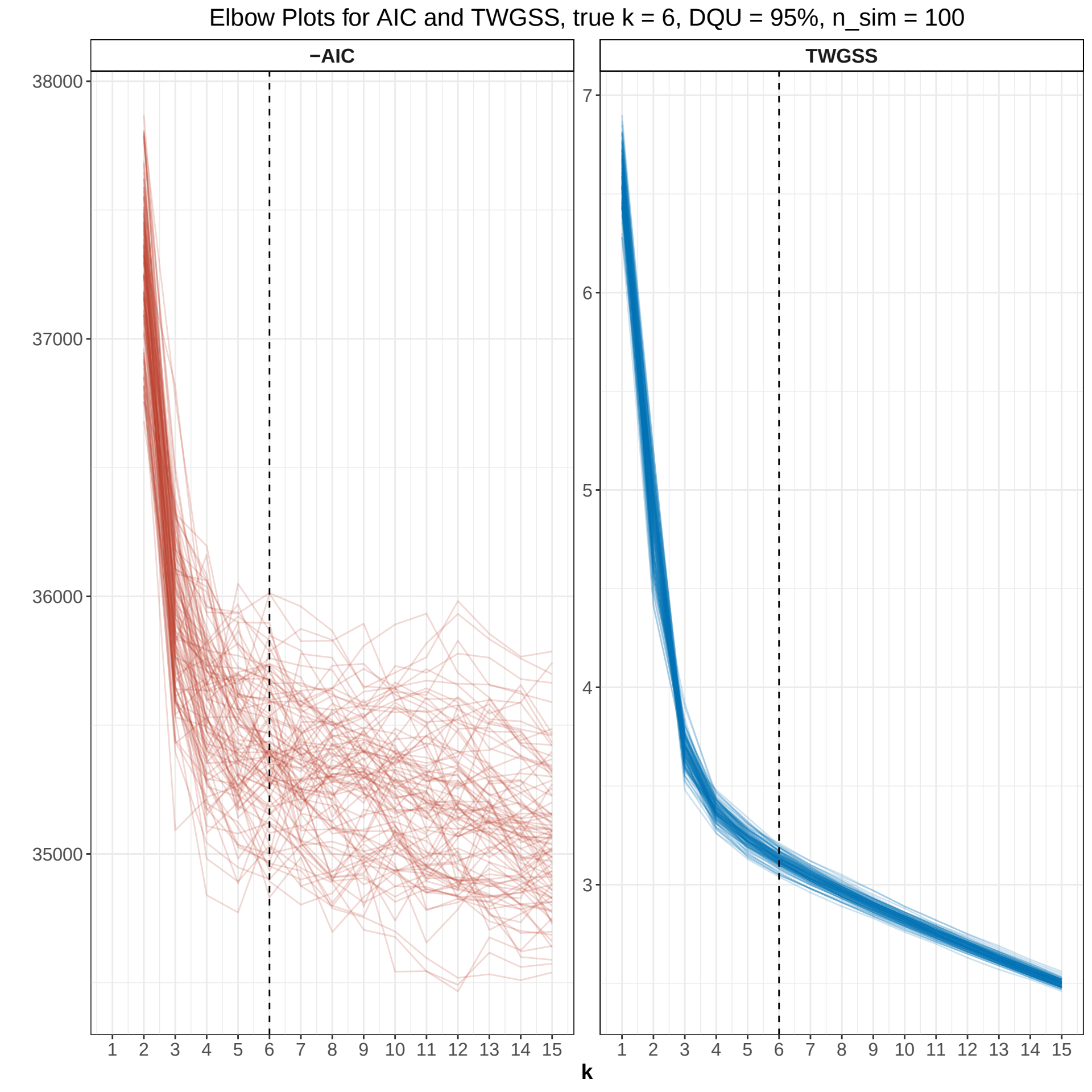
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 6, DQU = 95%, n_sim = 100
−AIC
TWGSS
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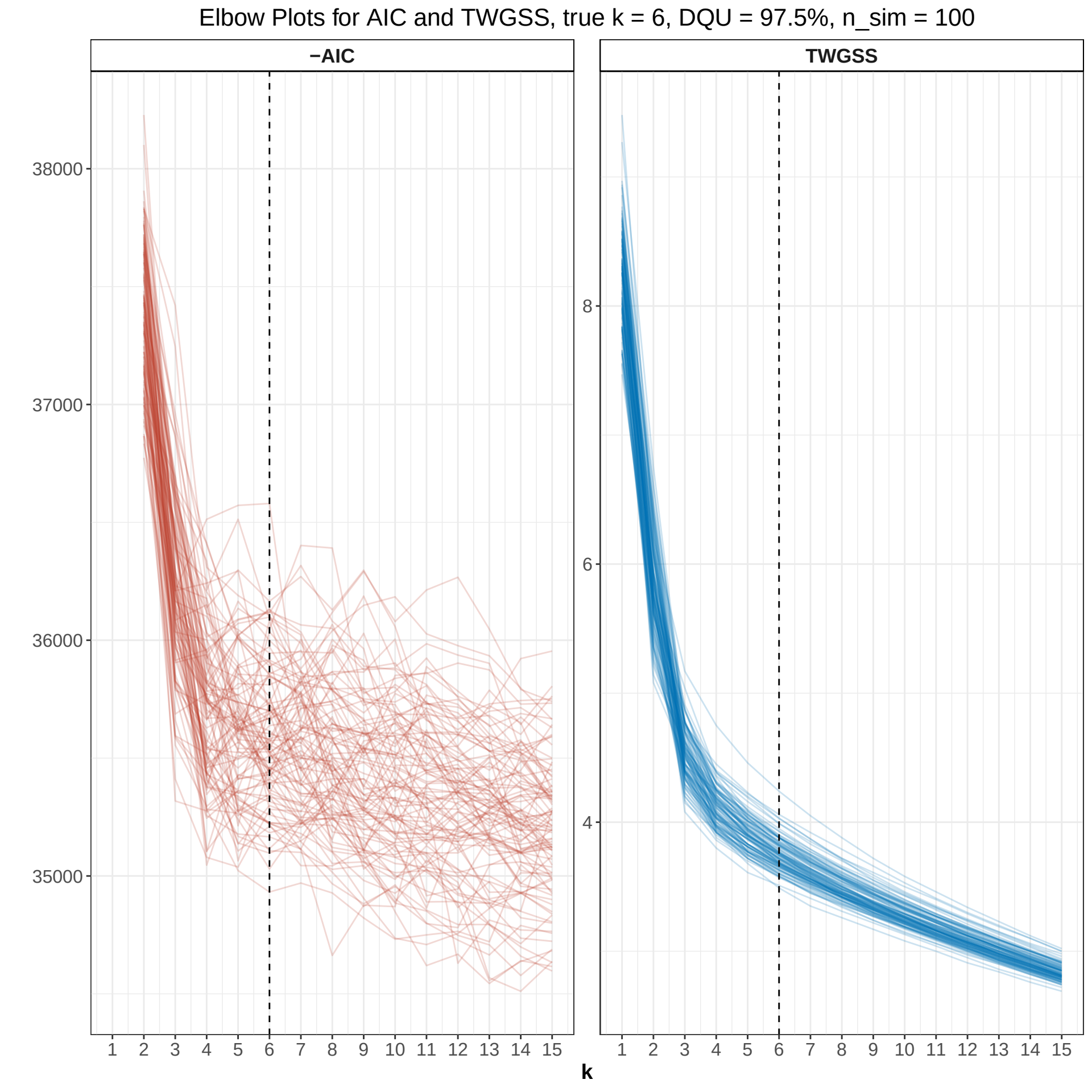
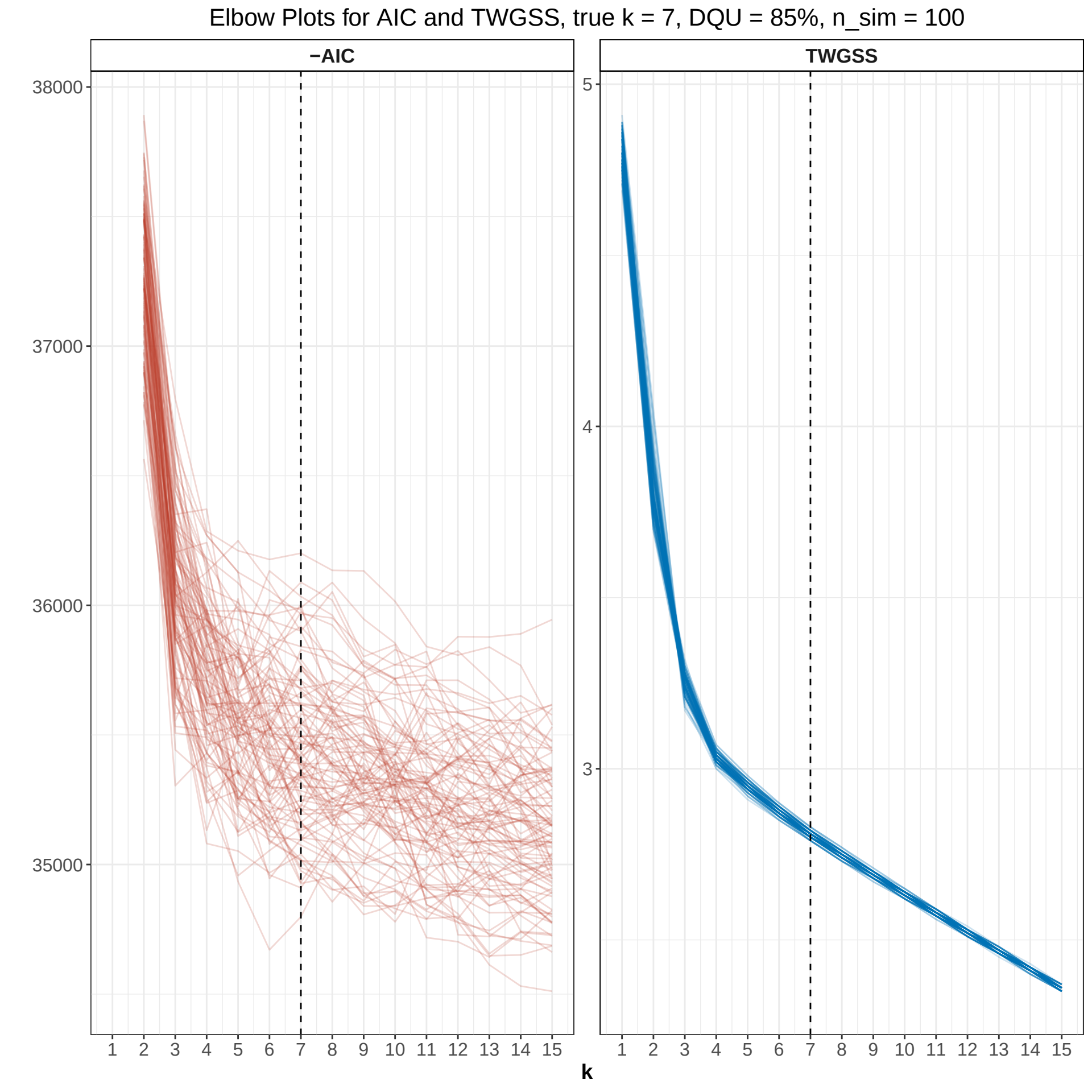
35000
7
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 6, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 7, DQU = 85%, n_sim = 100
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TWGSS
38000
37000
36000
35000
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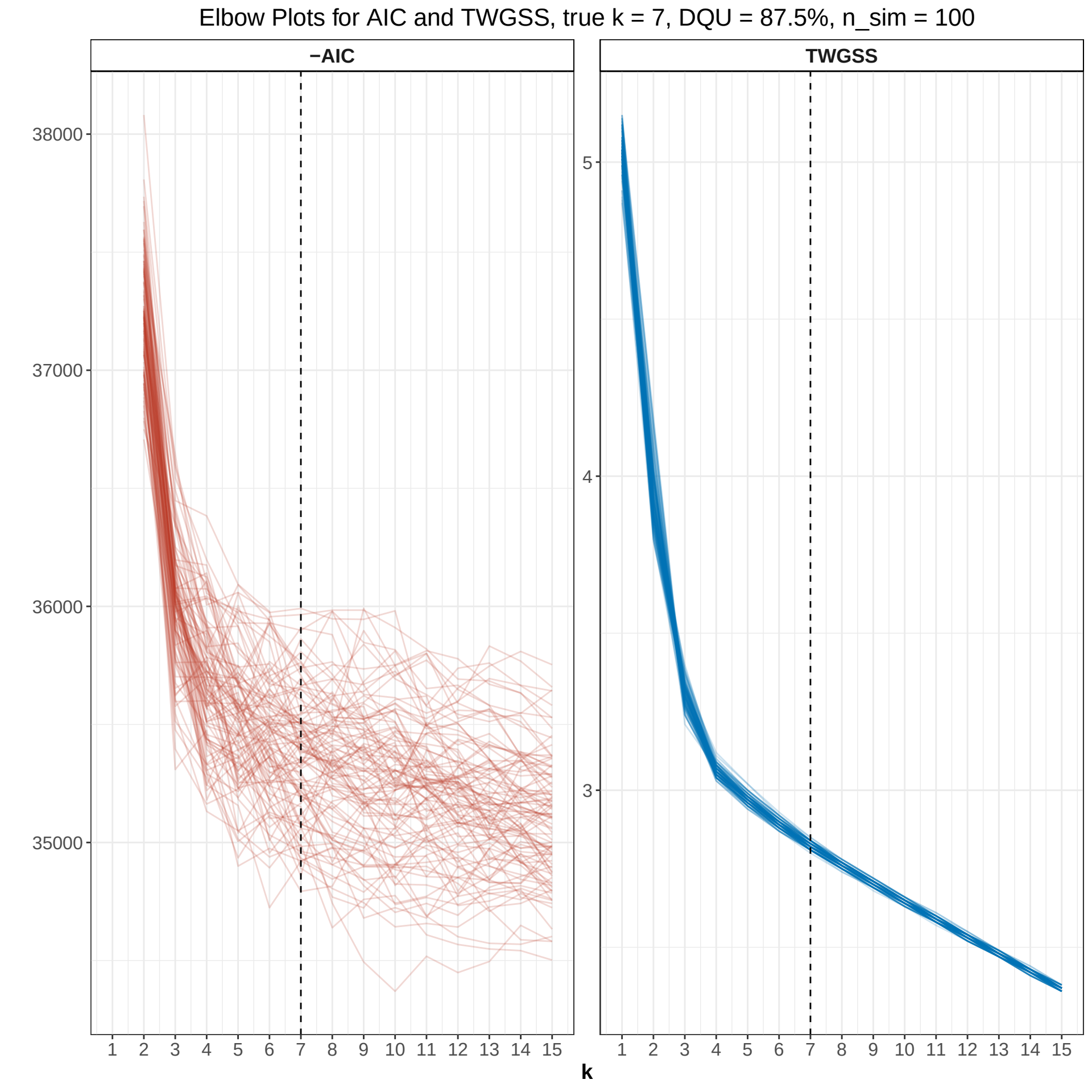
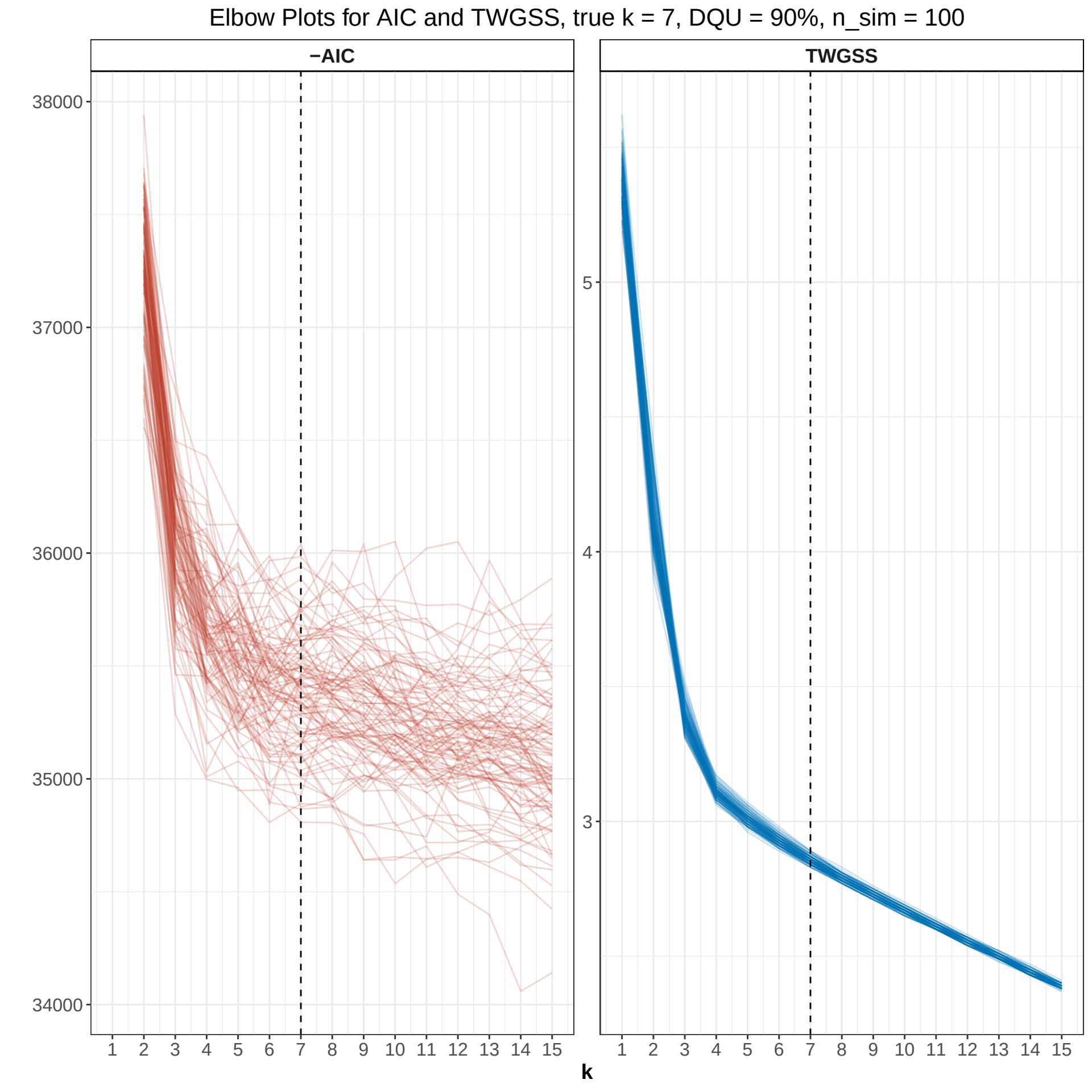
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 7, DQU = 87.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 7, DQU = 90%, n_sim = 100
−AIC
TWGSS
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37000
36000
35000
34000
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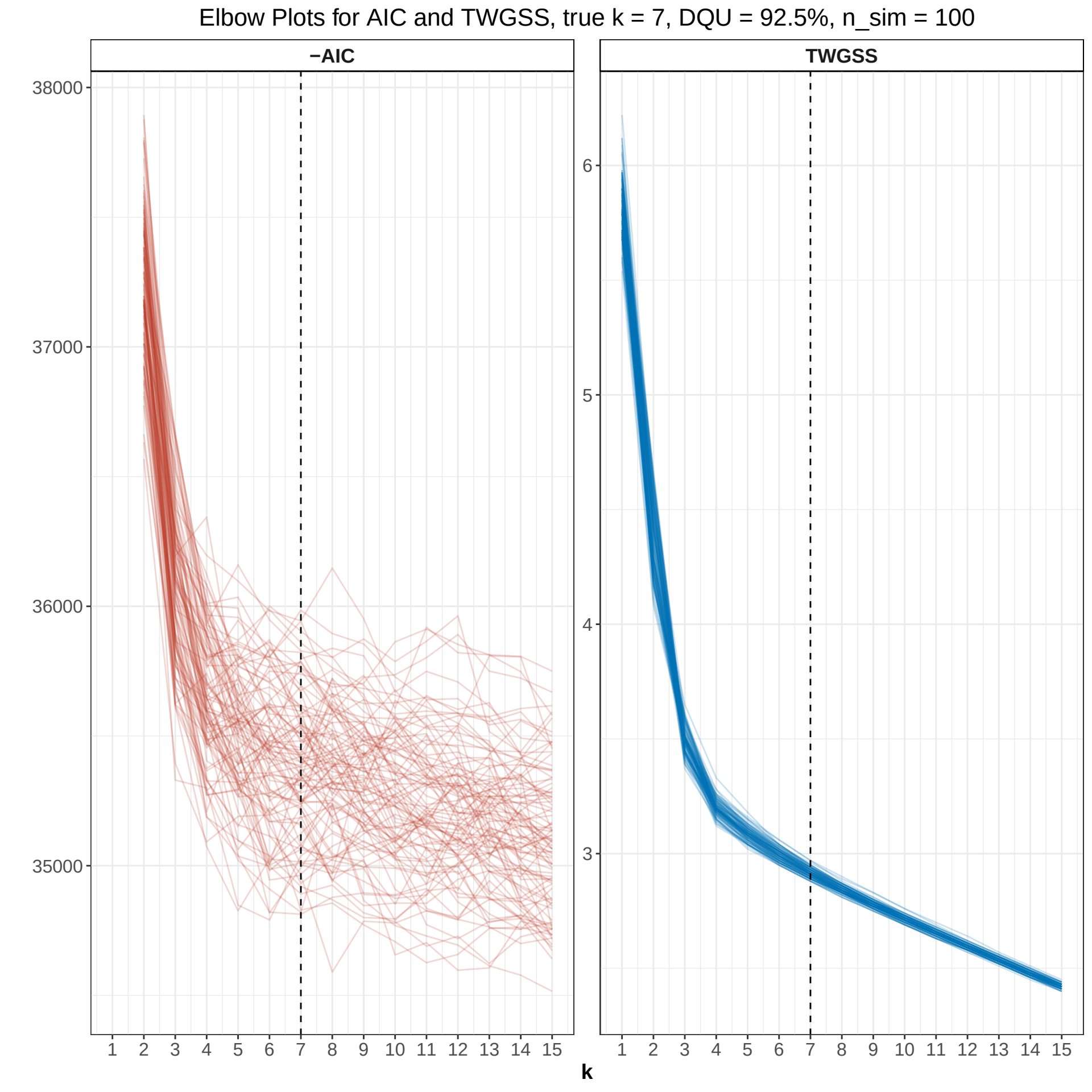
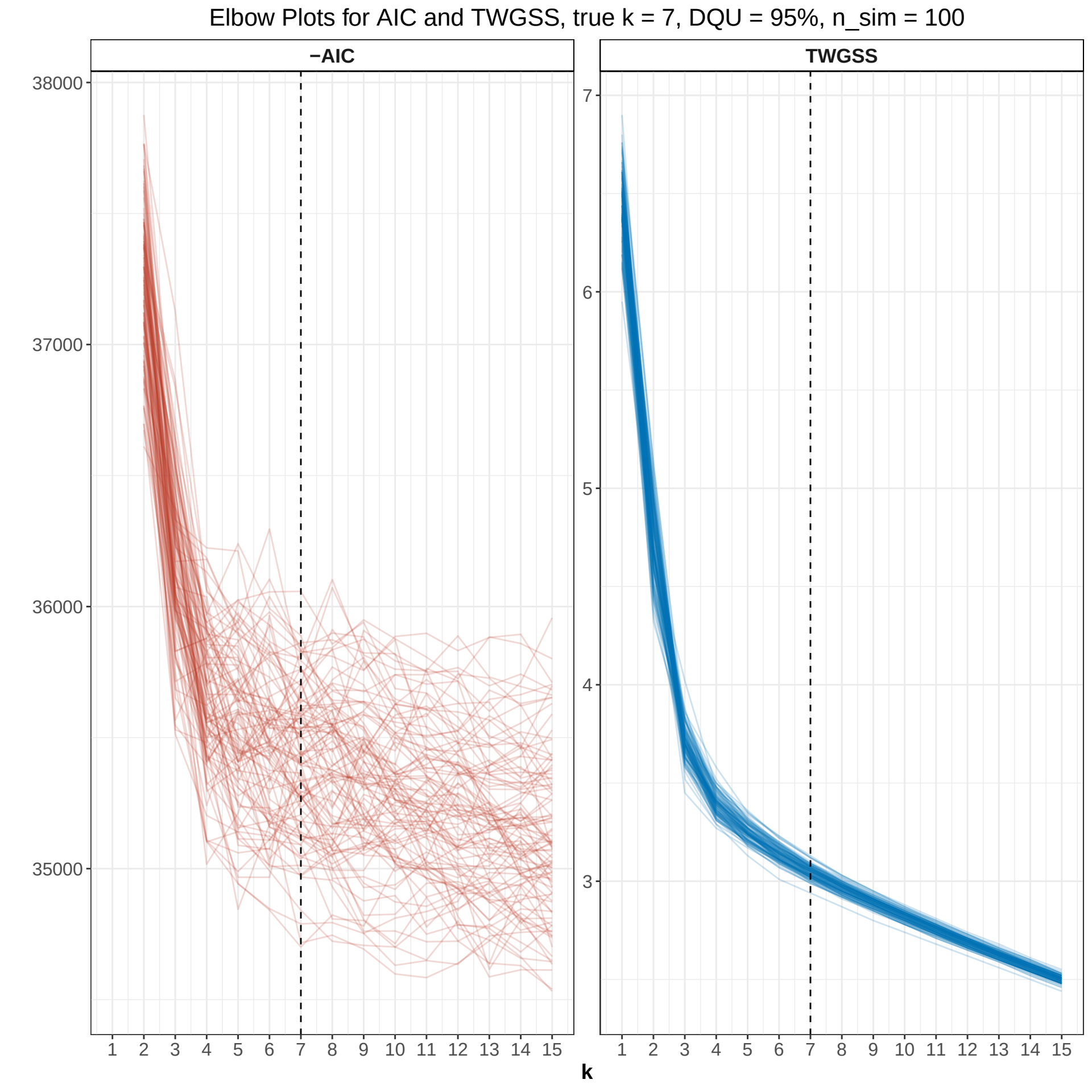
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 7, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 7, DQU = 95%, n_sim = 100
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TWGSS
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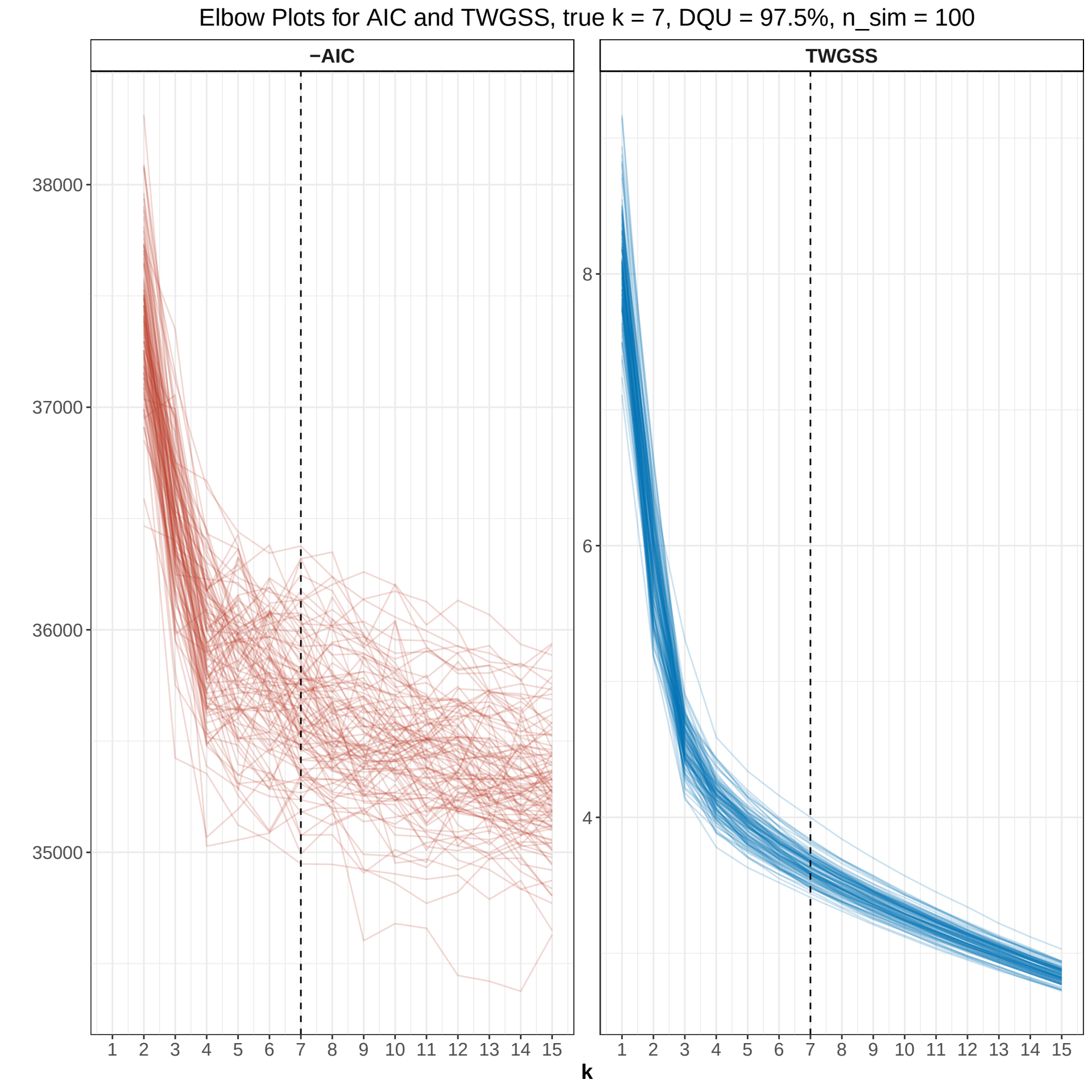
36000
35000
7
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 7, DQU = 97.5%, n_sim = 100
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TWGSS
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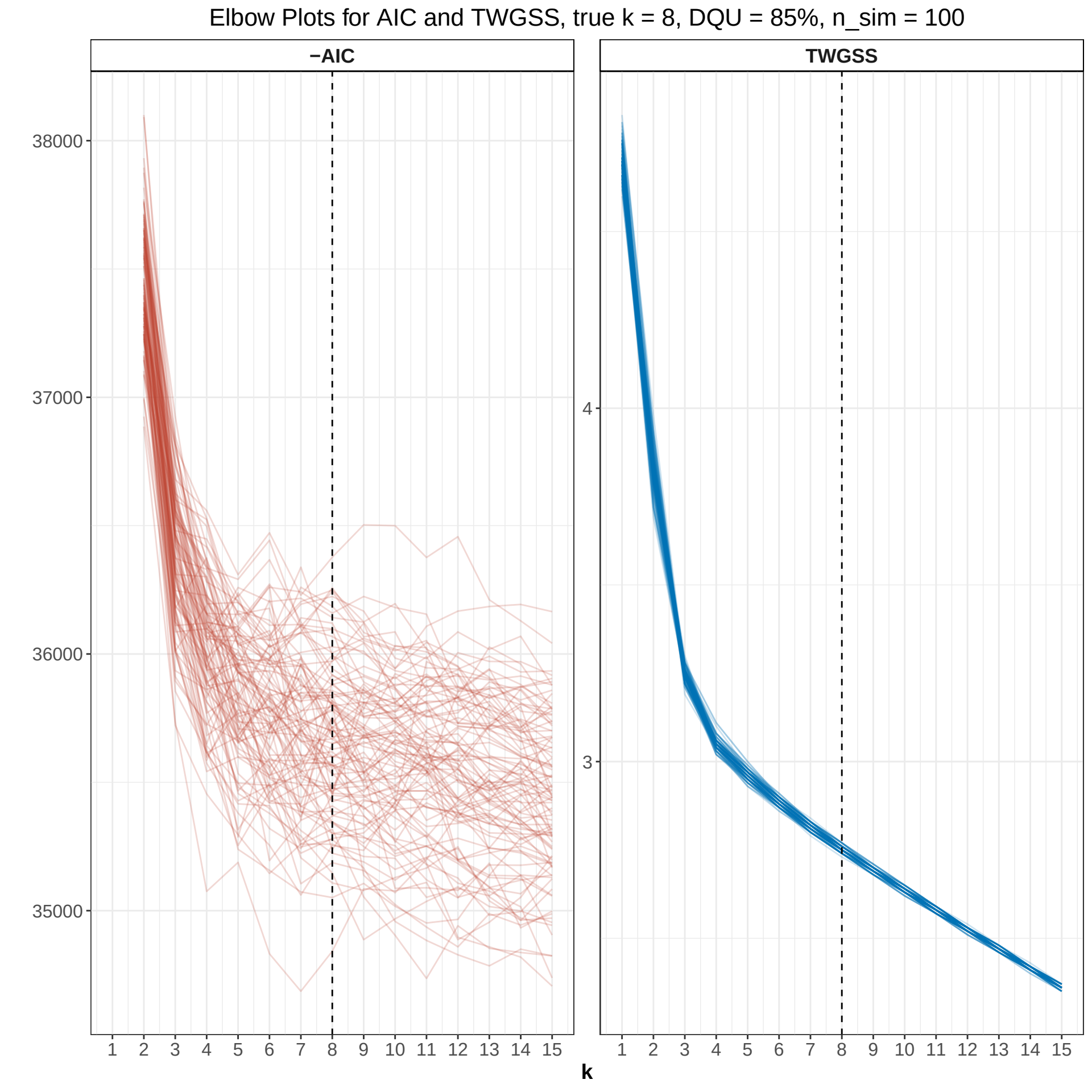
36000
35000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 8, DQU = 85%, n_sim = 100
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TWGSS
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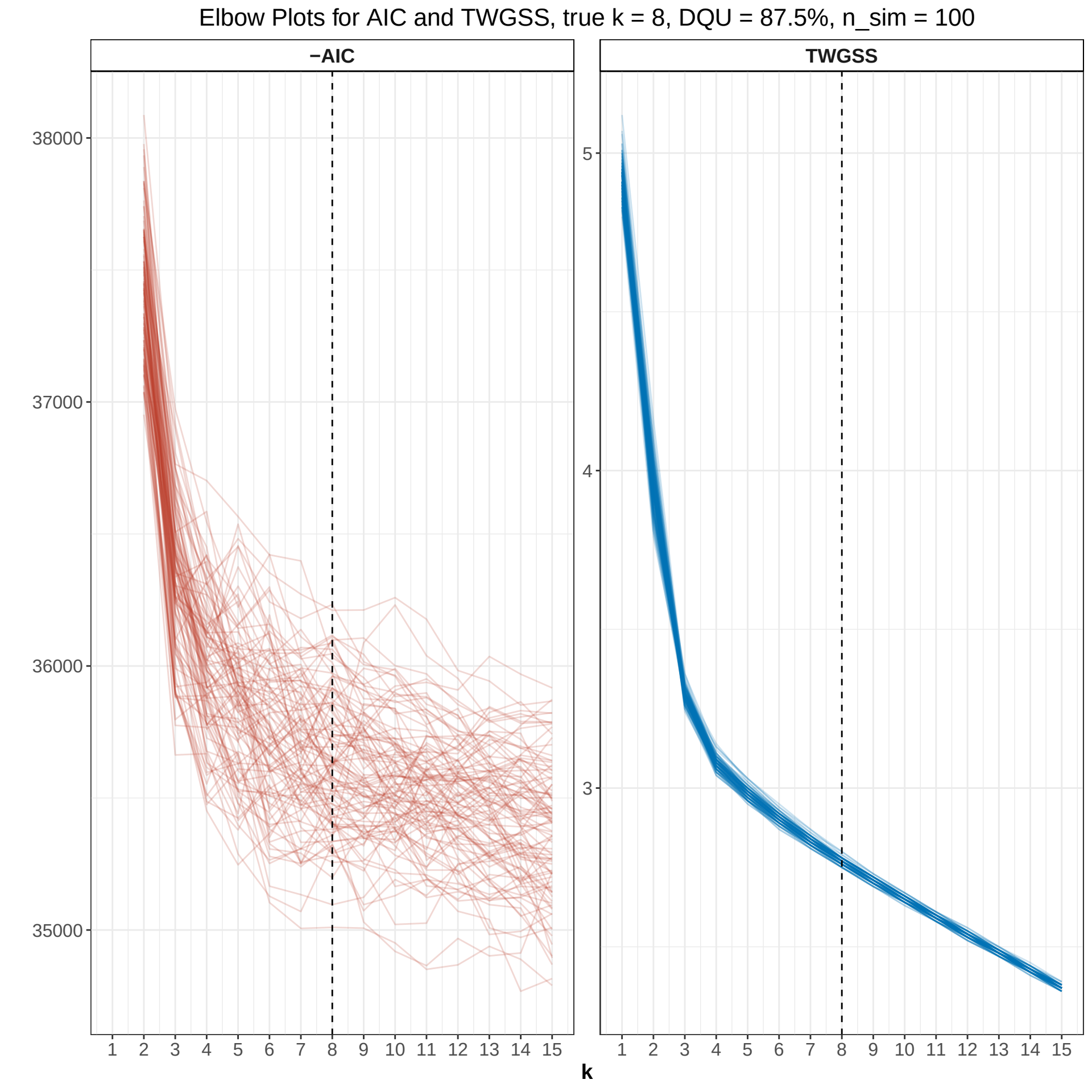
35000
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 8, DQU = 87.5%, n_sim = 100
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TWGSS
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36000
35000
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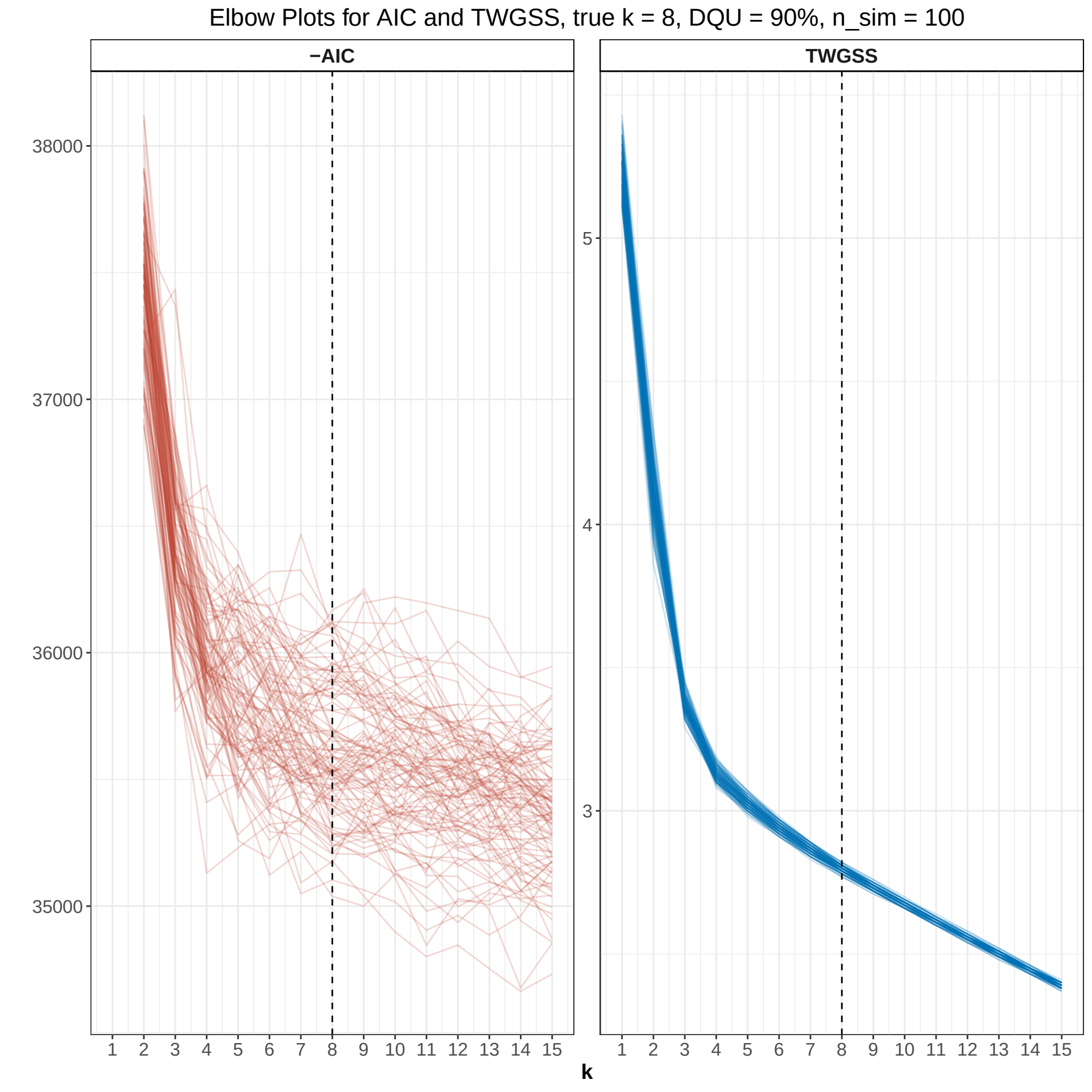
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 8, DQU = 90%, n_sim = 100
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TWGSS
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35000
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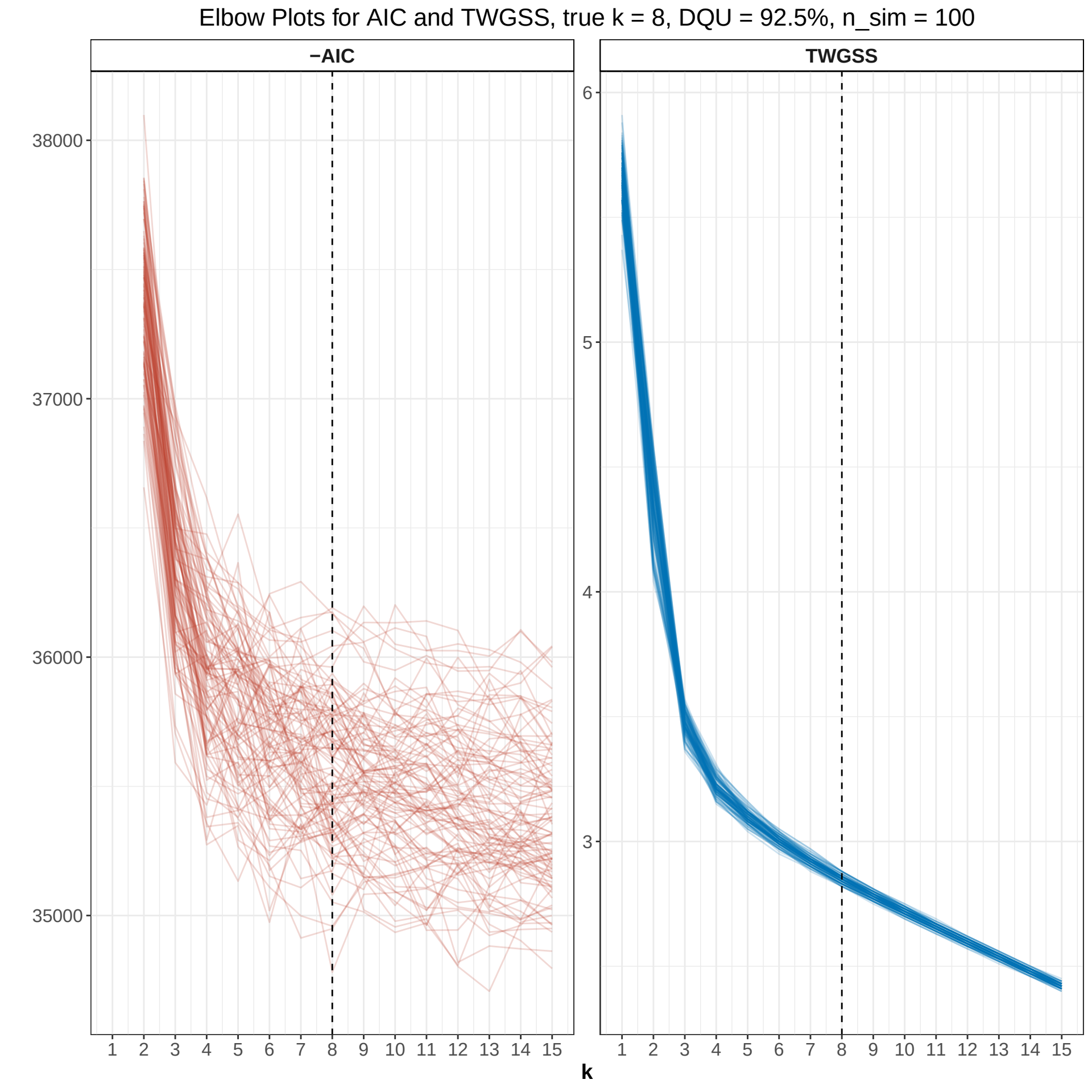
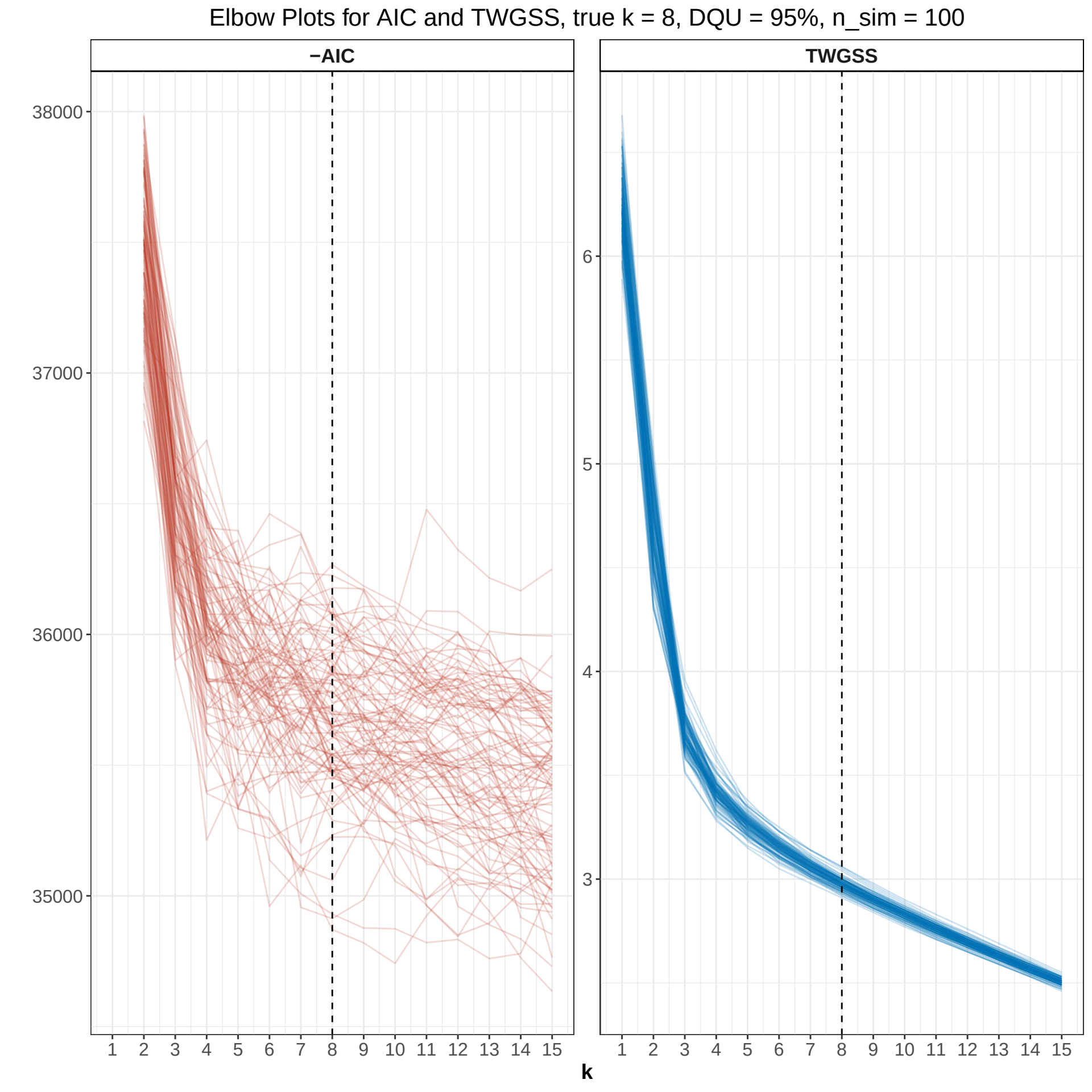
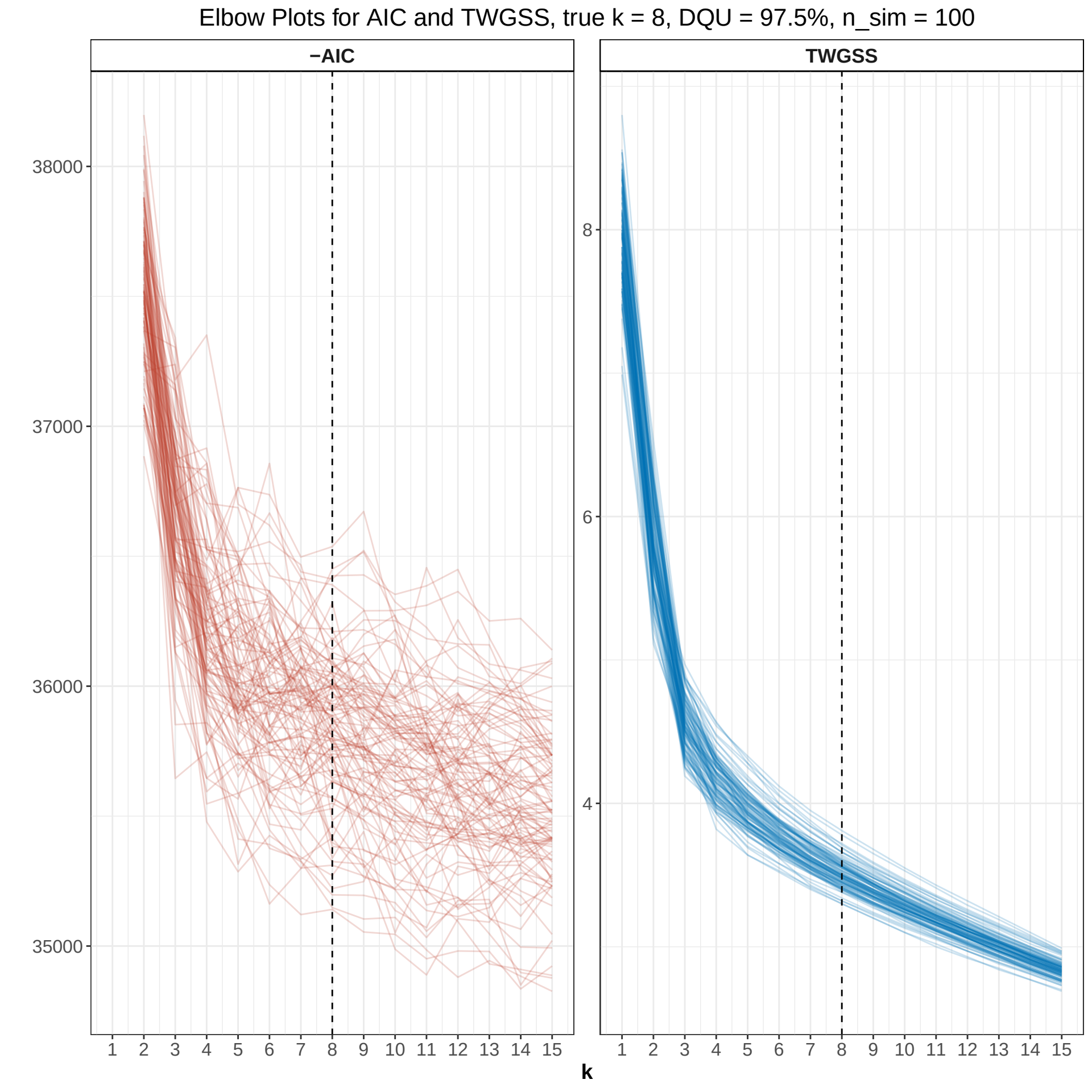
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 8, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 8, DQU = 95%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 8, DQU = 97.5%, n_sim = 100
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TWGSS
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36000
35000
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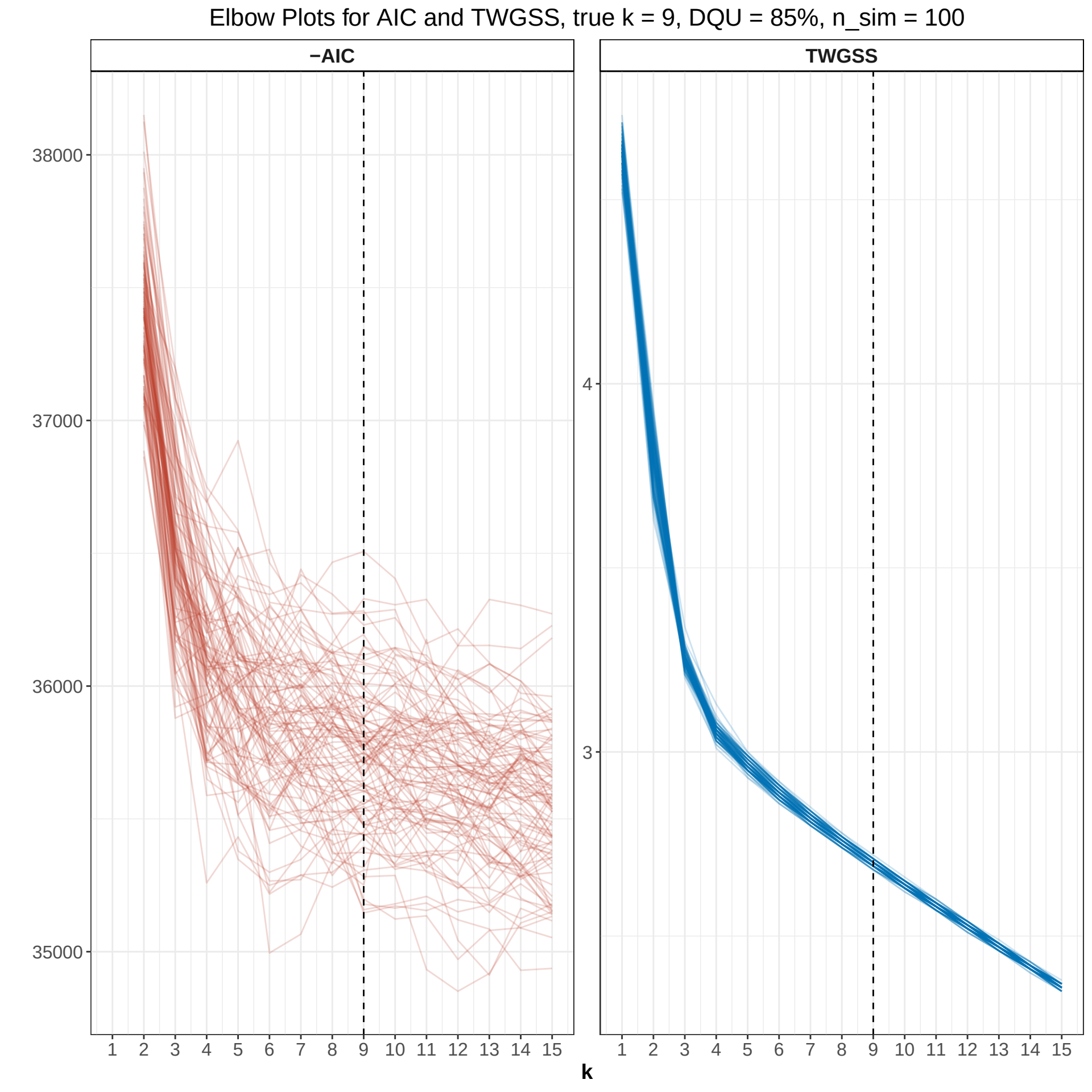
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 9, DQU = 85%, n_sim = 100
−AIC
TWGSS
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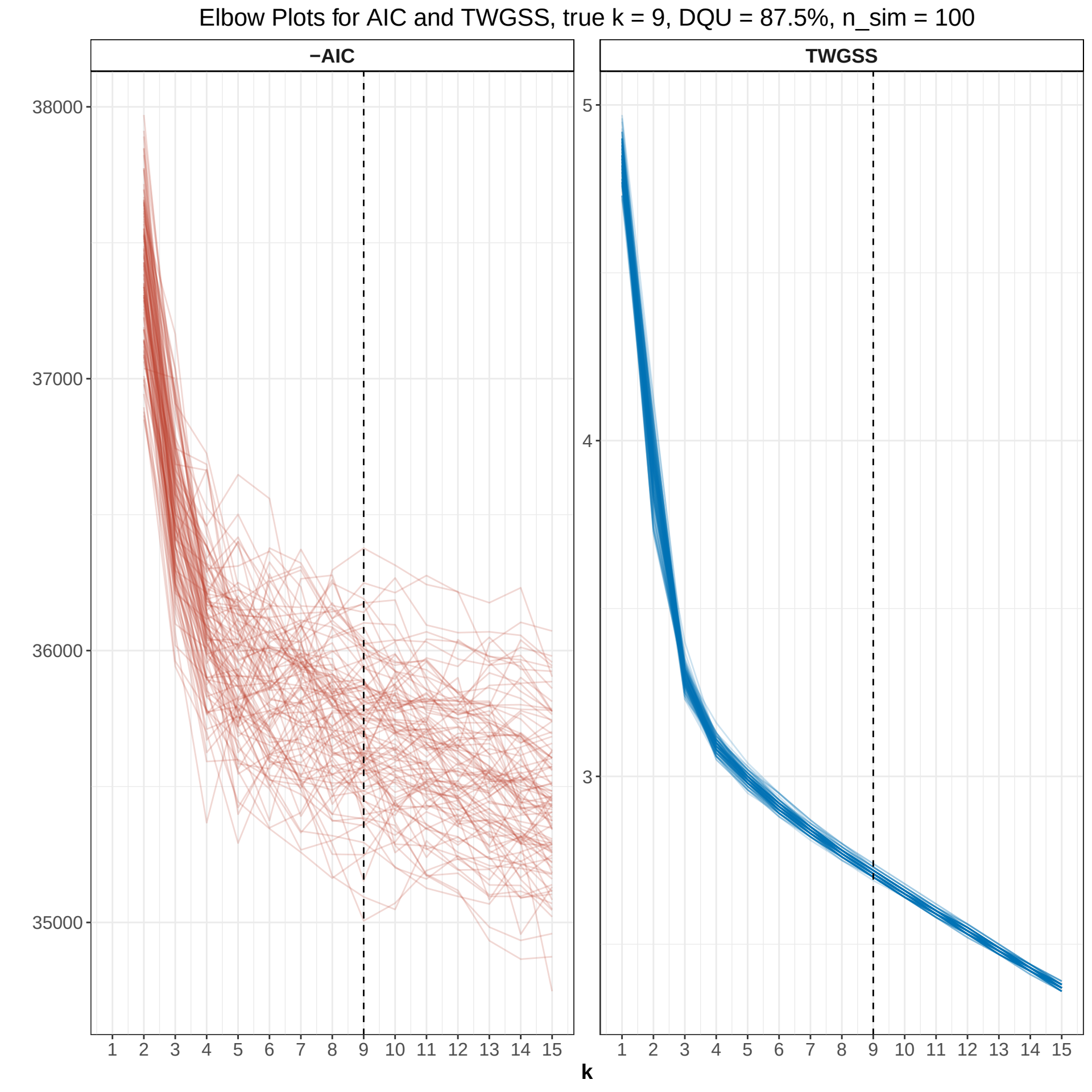
35000
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 9, DQU = 87.5%, n_sim = 100
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TWGSS
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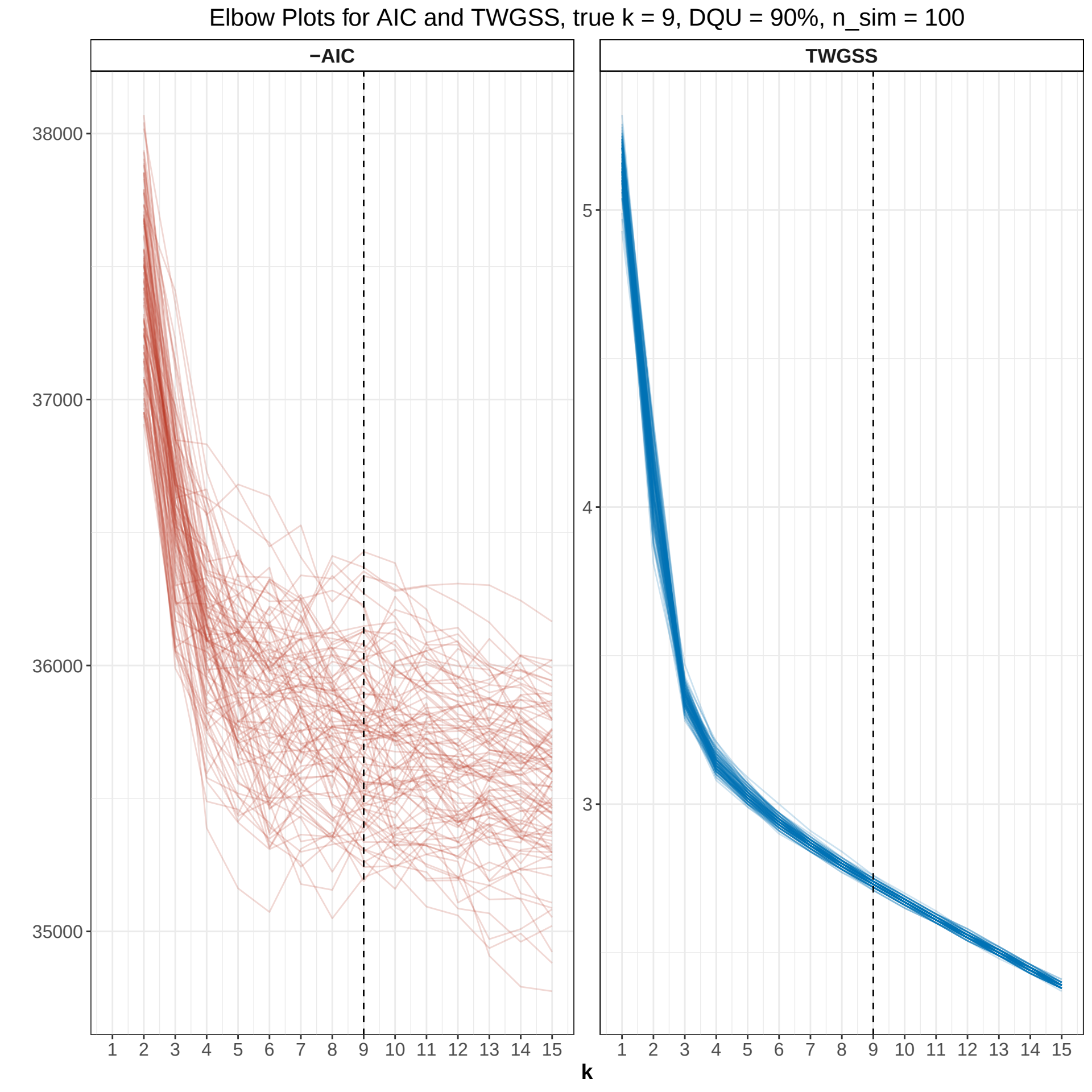
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 9, DQU = 90%, n_sim = 100
−AIC
TWGSS
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37000
36000
35000
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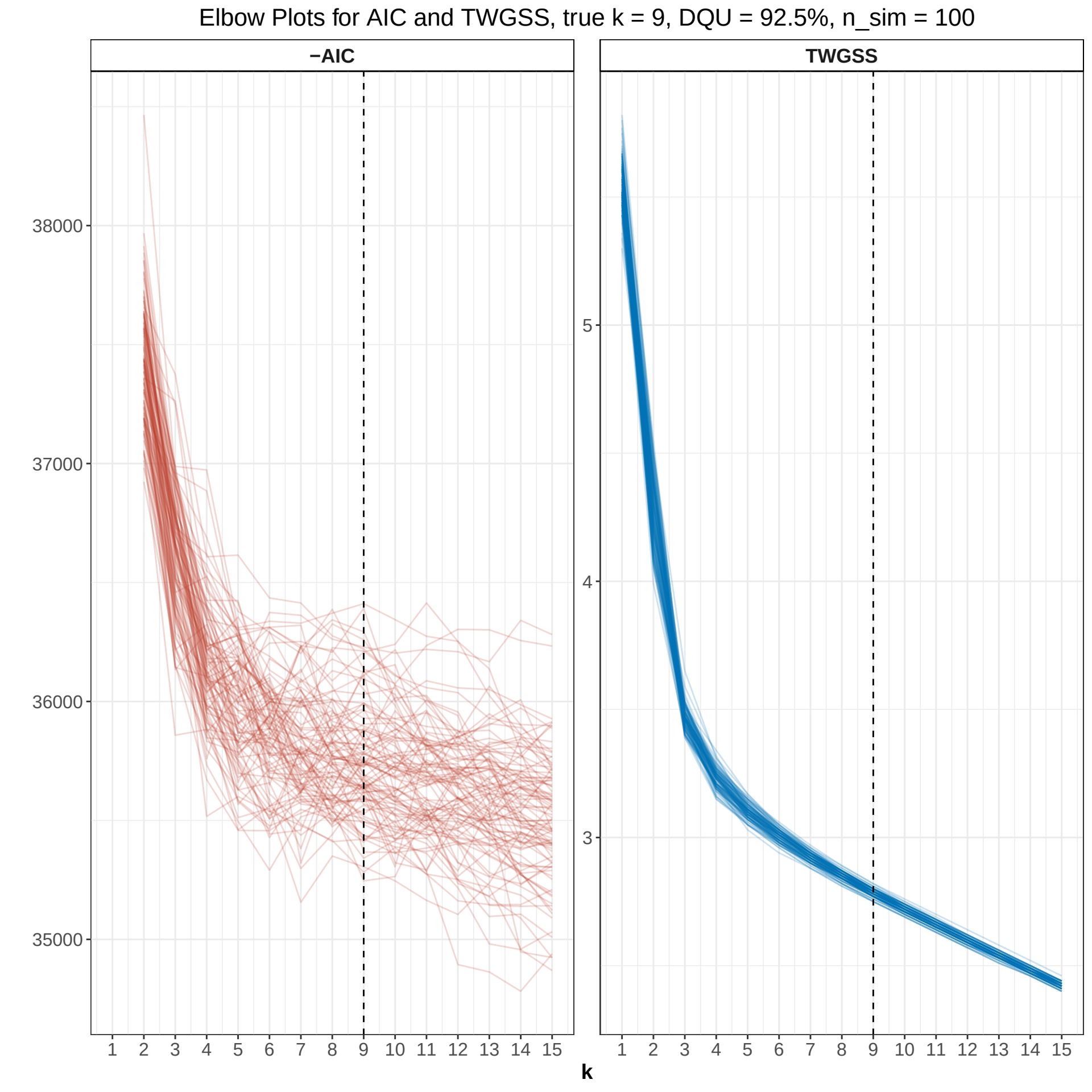
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 9, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
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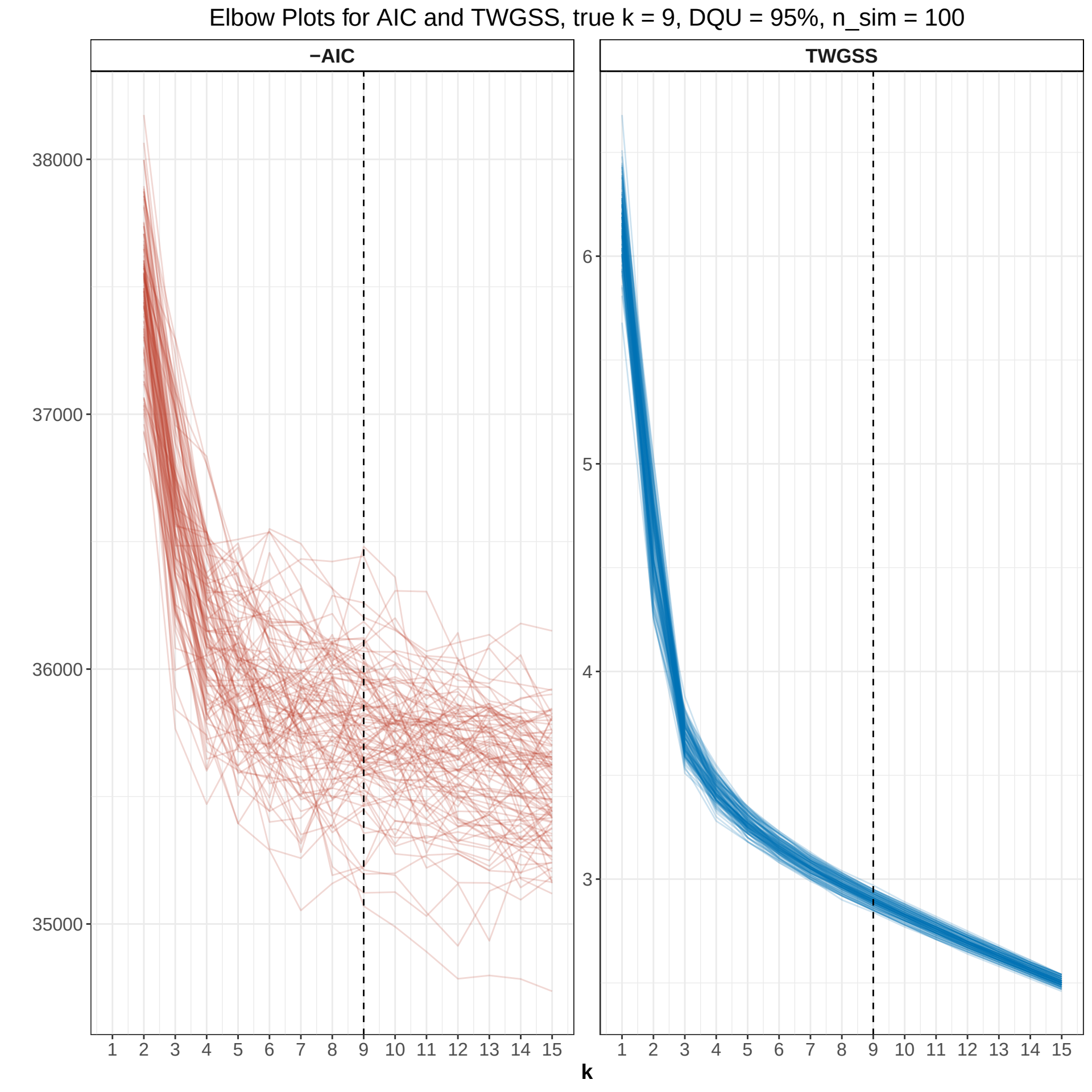
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 9, DQU = 95%, n_sim = 100
−AIC
TWGSS
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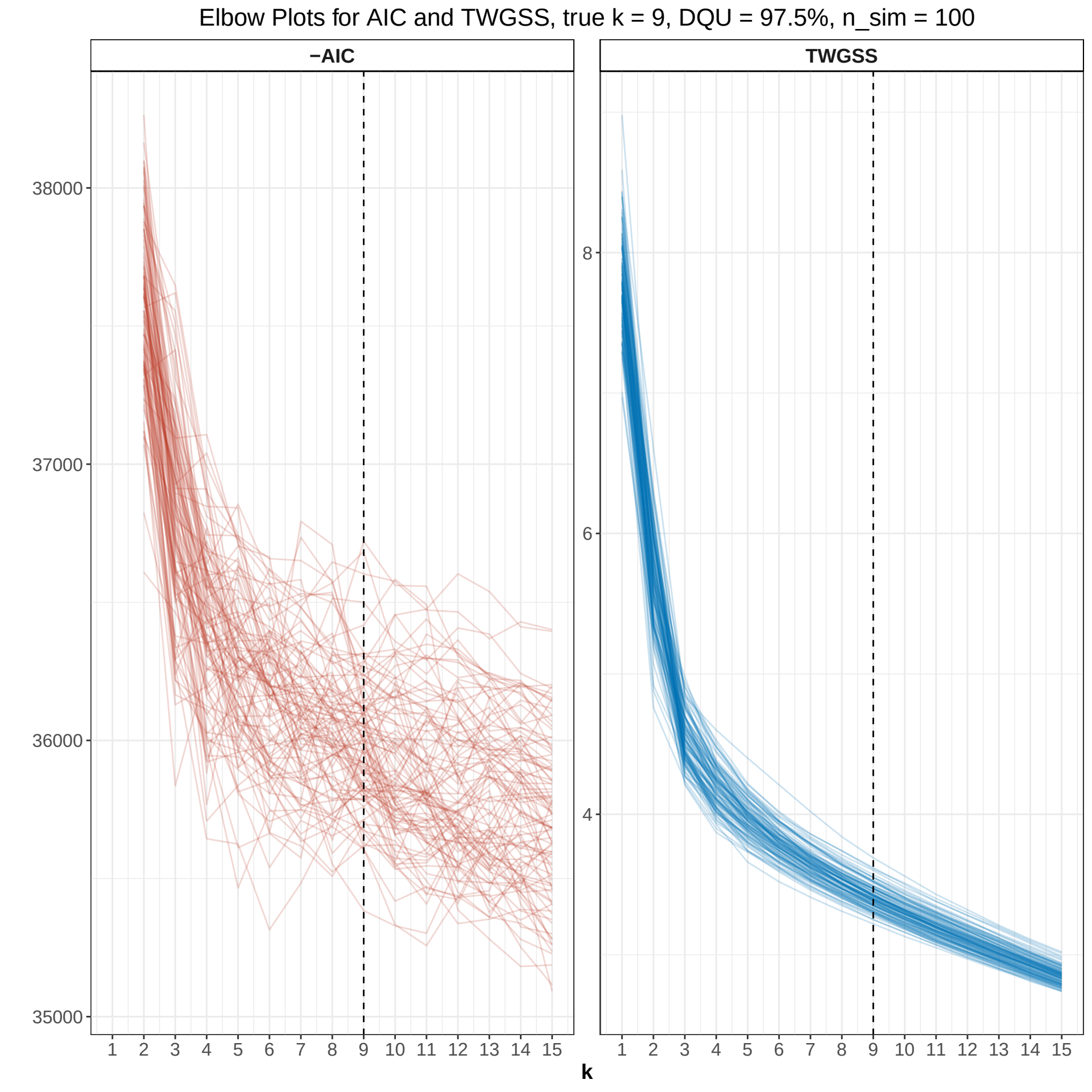
37000
36000
35000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 9, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
38000
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36000
35000
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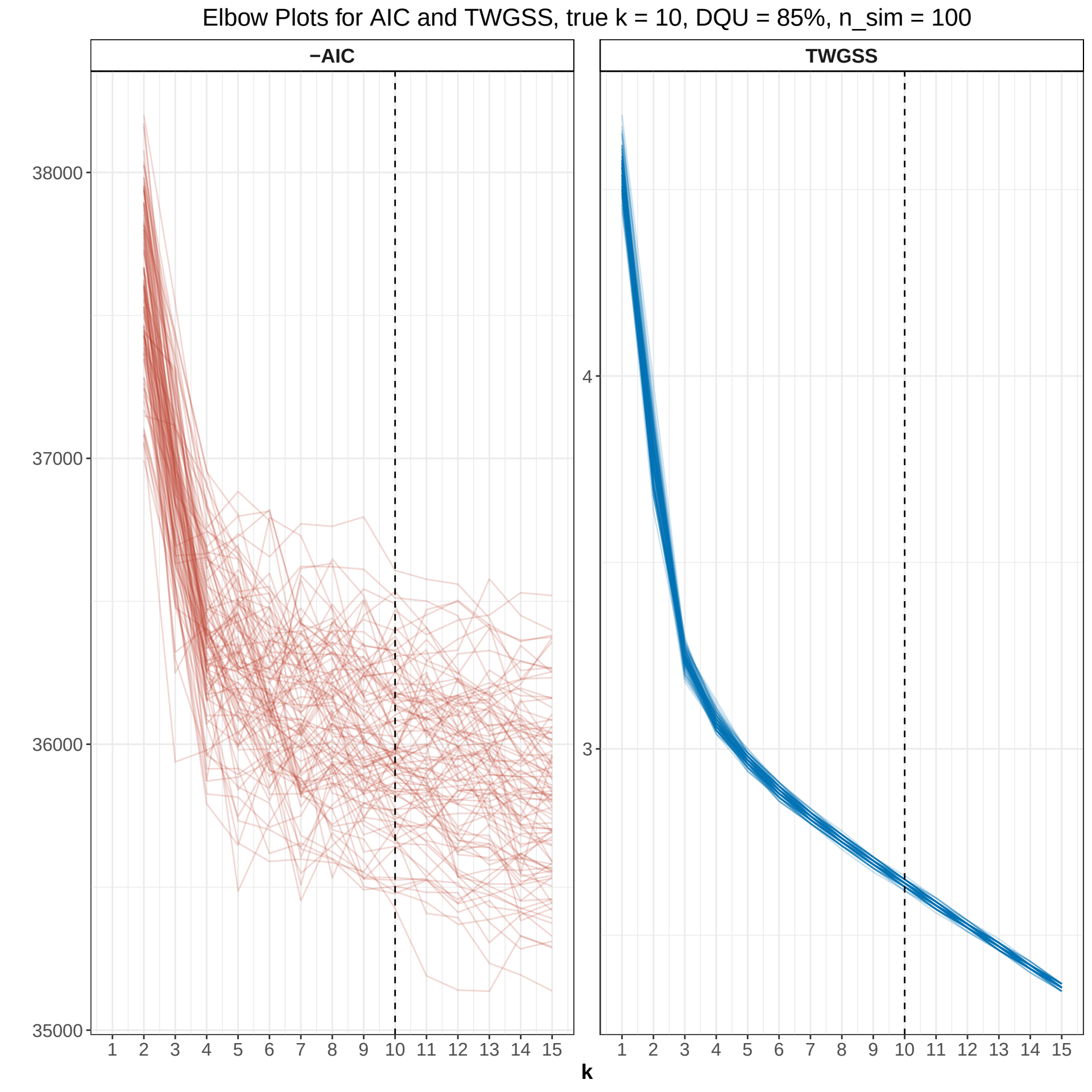
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 10, DQU = 85%, n_sim = 100
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TWGSS
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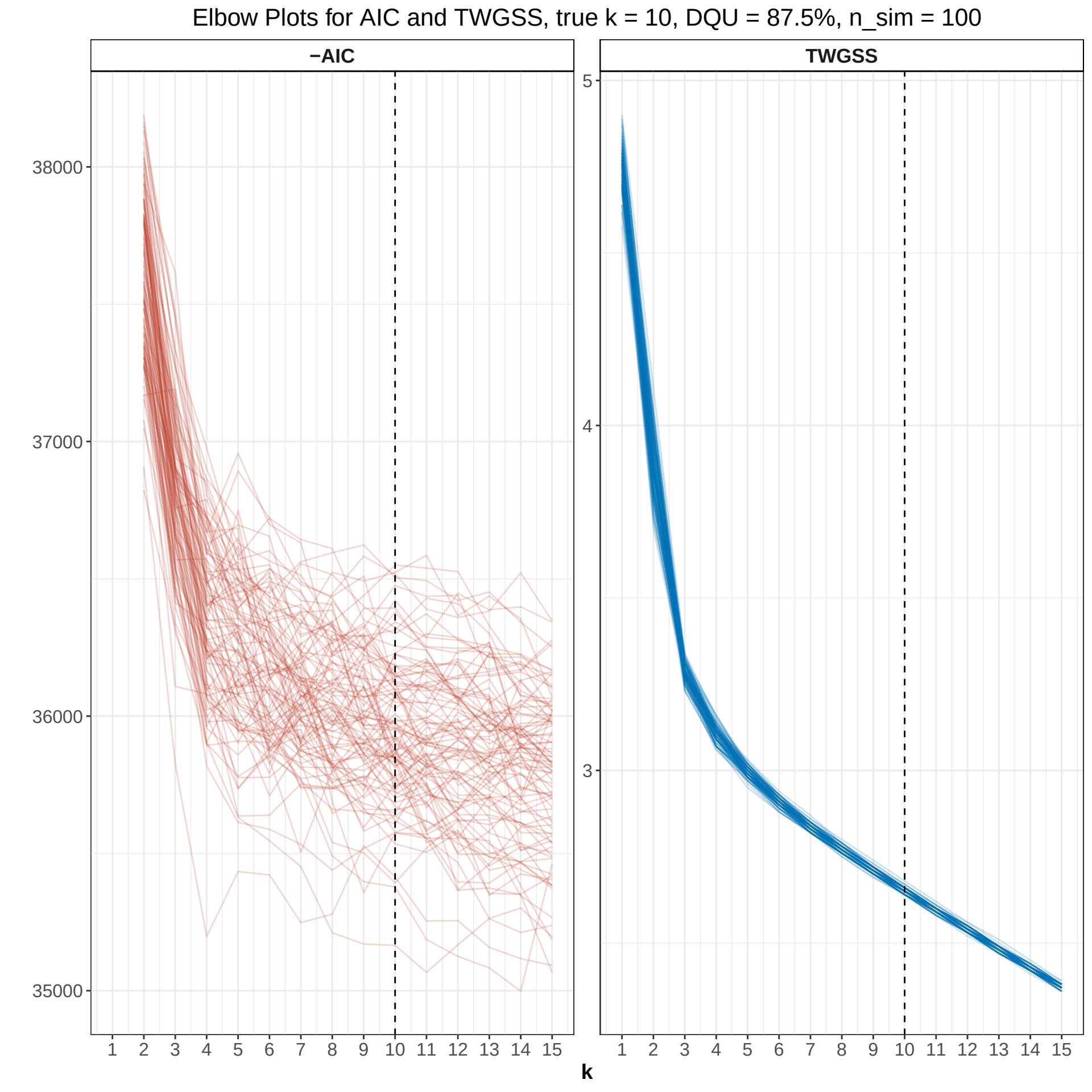
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 10, DQU = 87.5%, n_sim = 100
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TWGSS
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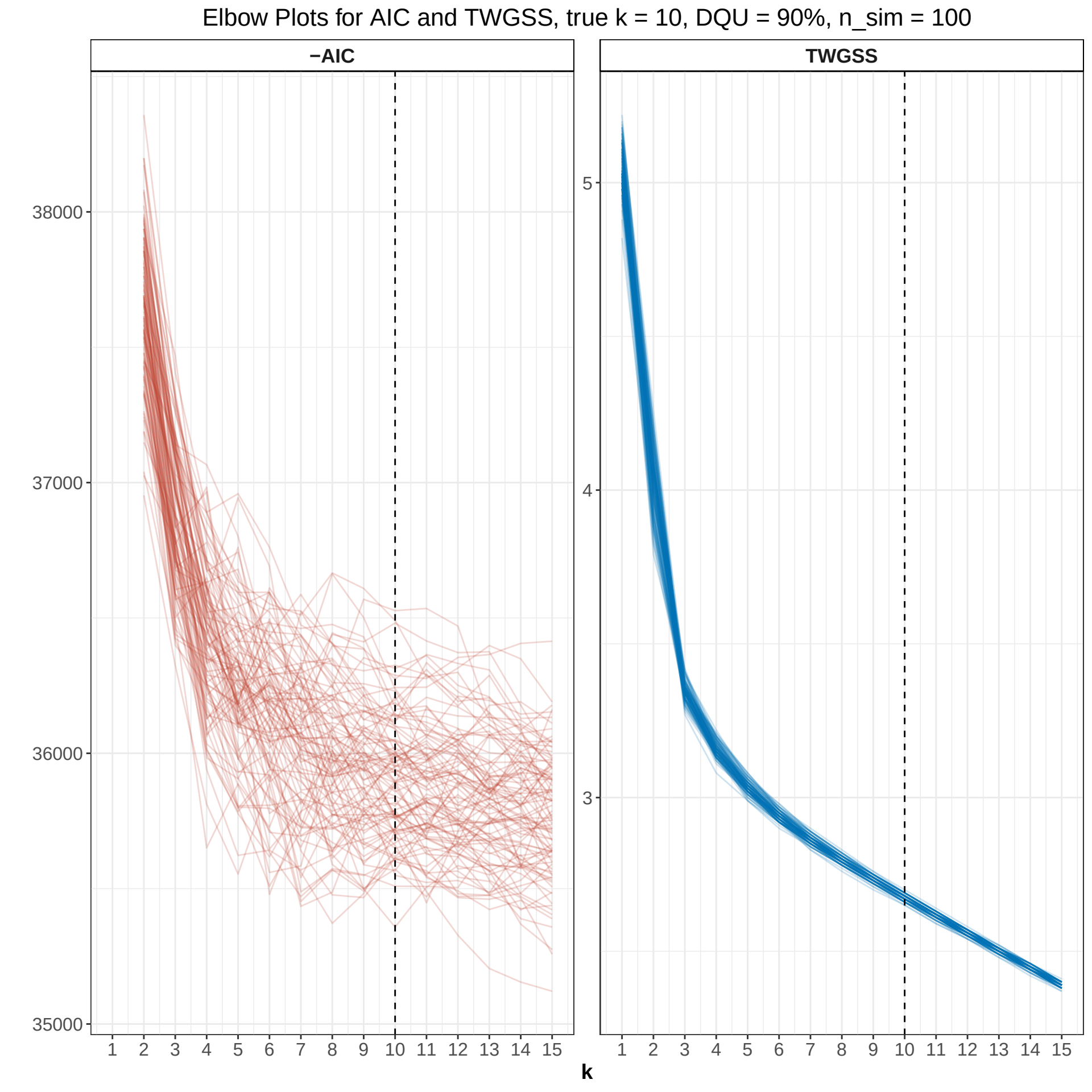
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 10, DQU = 90%, n_sim = 100
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TWGSS
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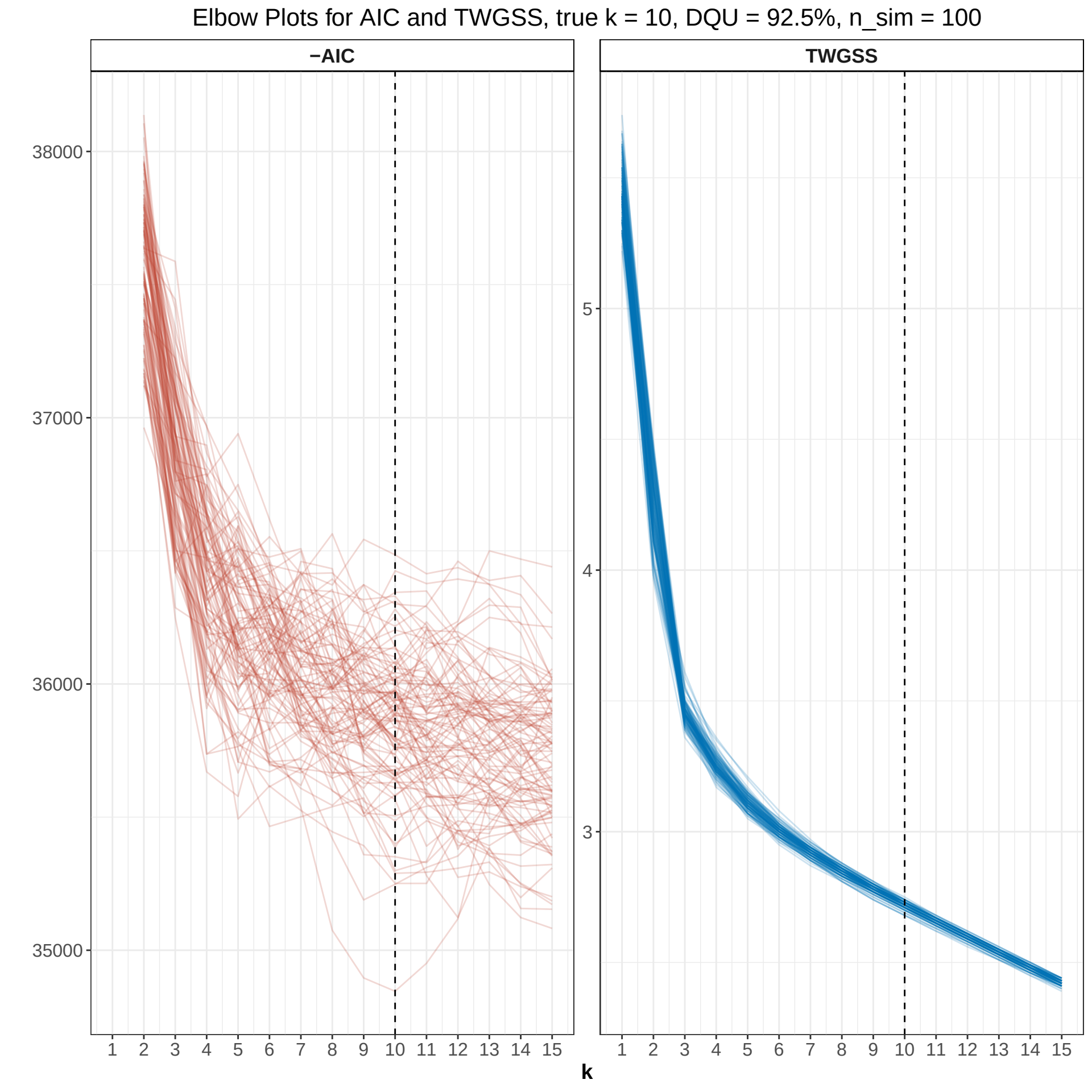
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 10, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
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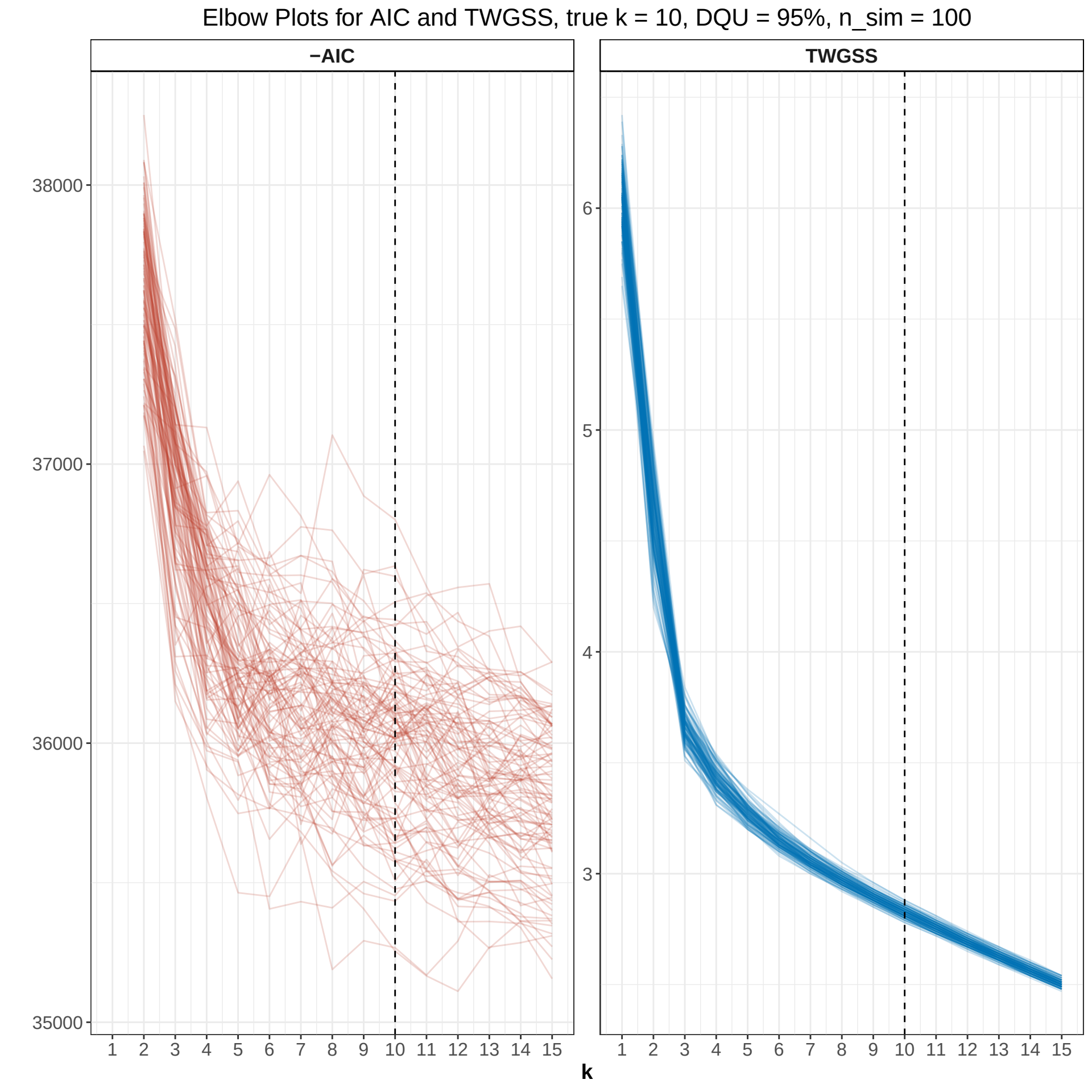
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 10, DQU = 95%, n_sim = 100
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TWGSS
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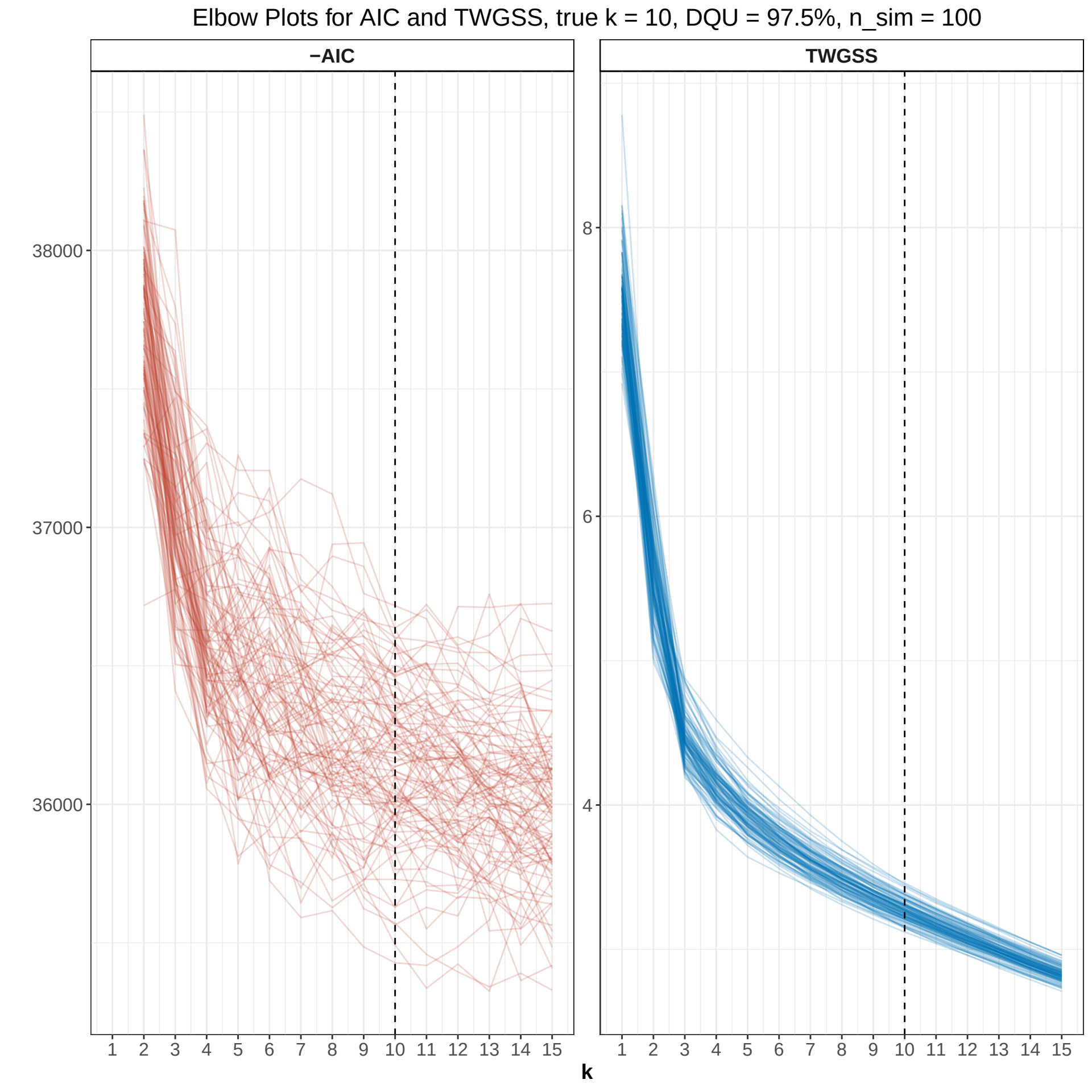
37000
36000
35000
6
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 10, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
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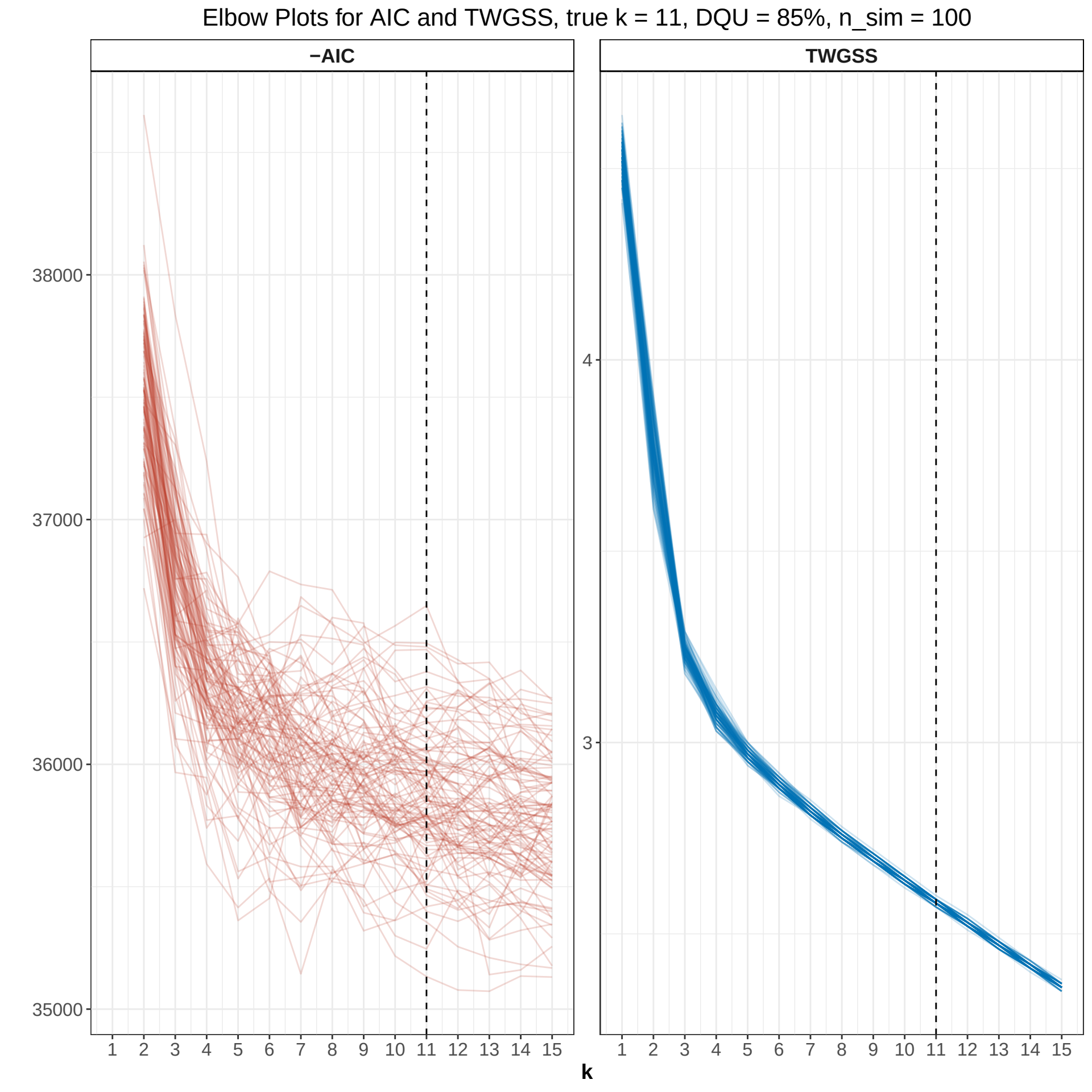
37000
36000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 11, DQU = 85%, n_sim = 100
−AIC
TWGSS
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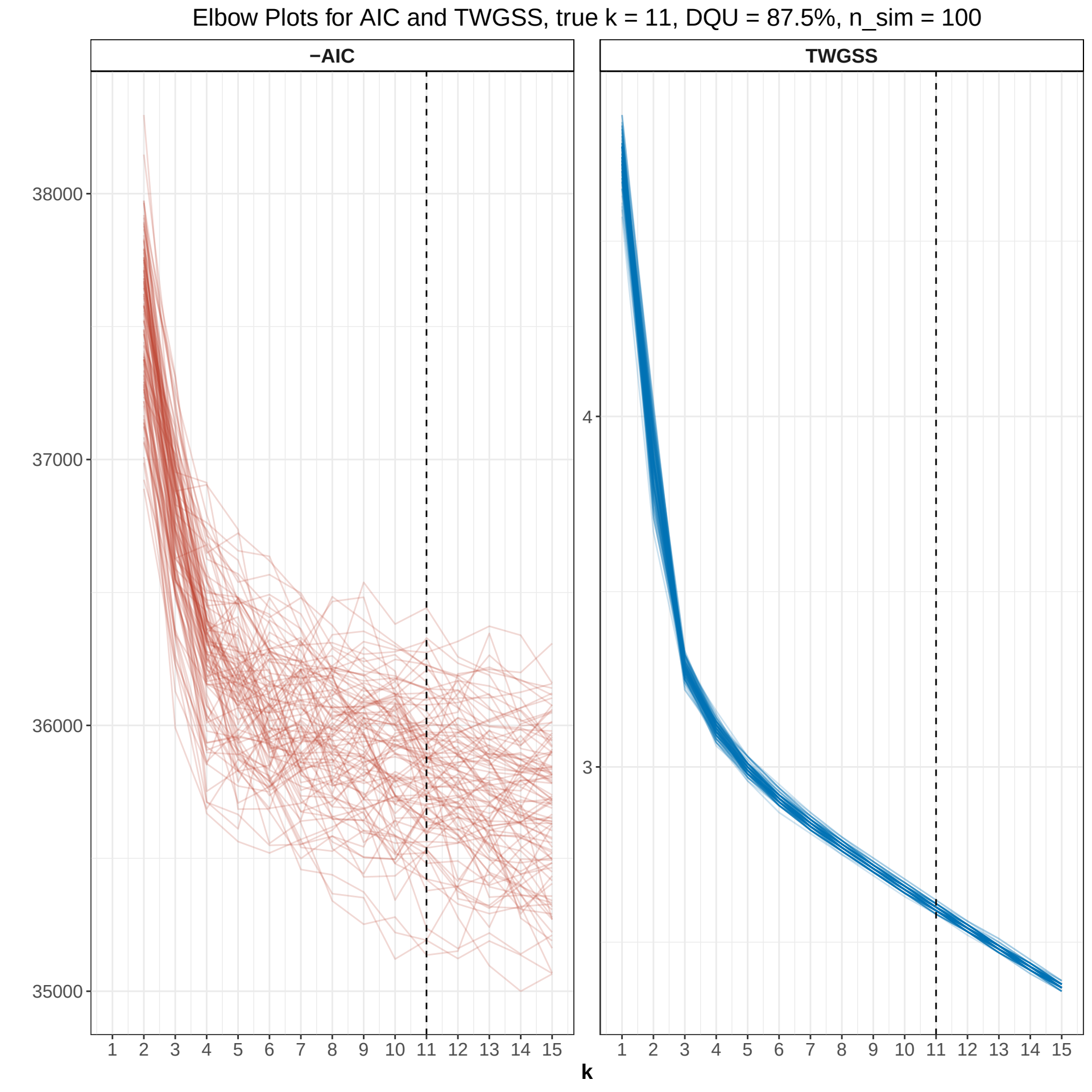
36000
35000
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 11, DQU = 87.5%, n_sim = 100
−AIC
TWGSS
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37000
36000
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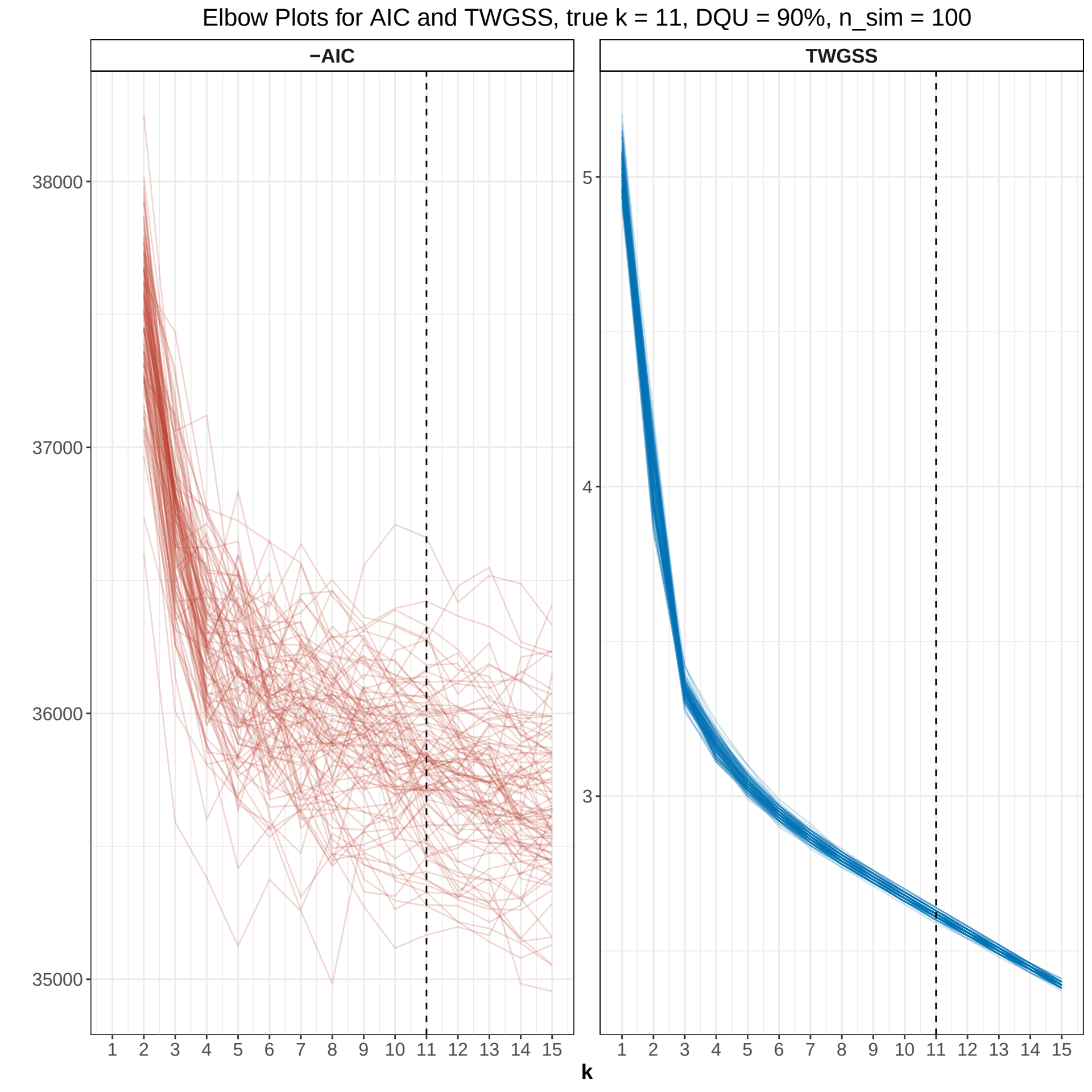
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 11, DQU = 90%, n_sim = 100
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TWGSS
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36000
35000
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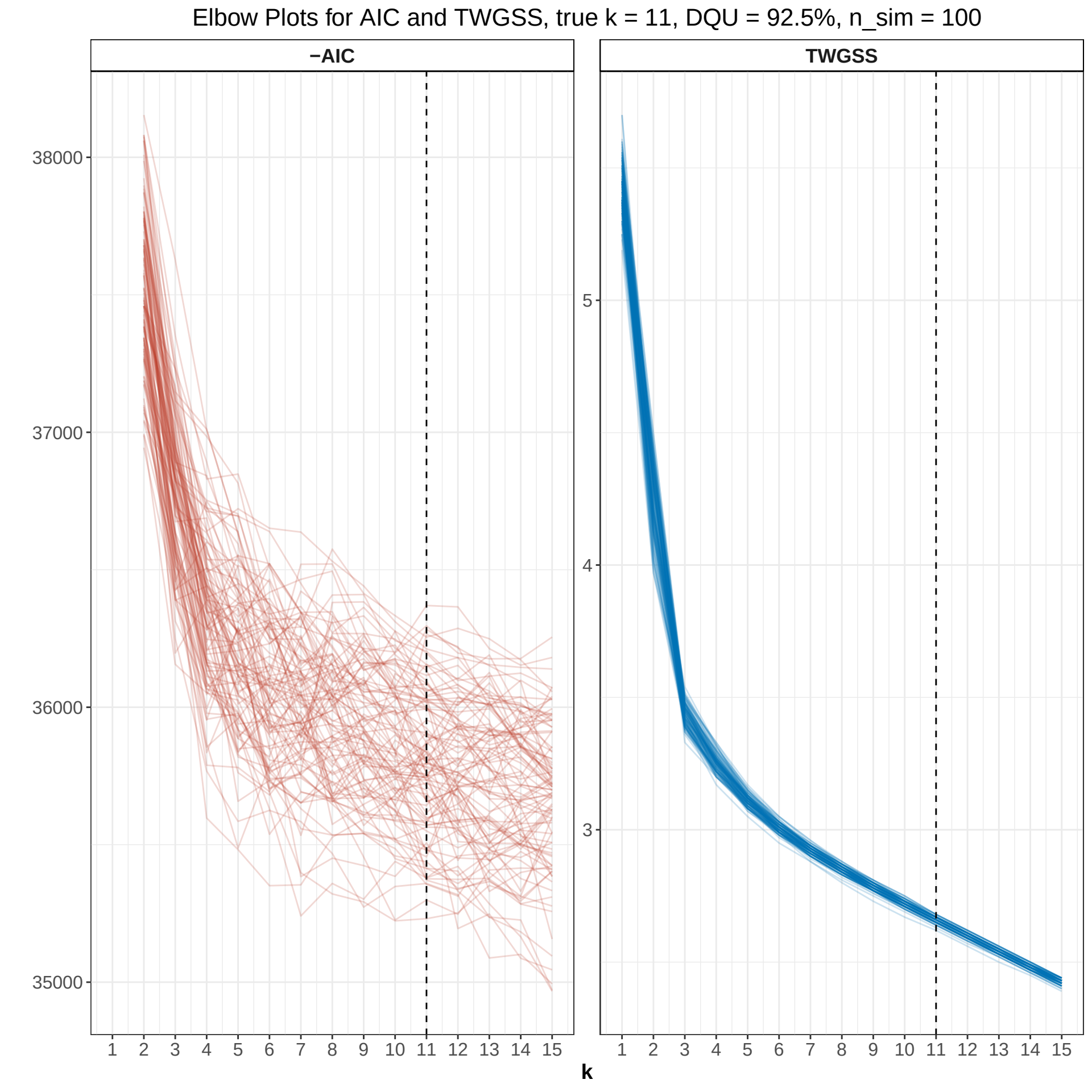
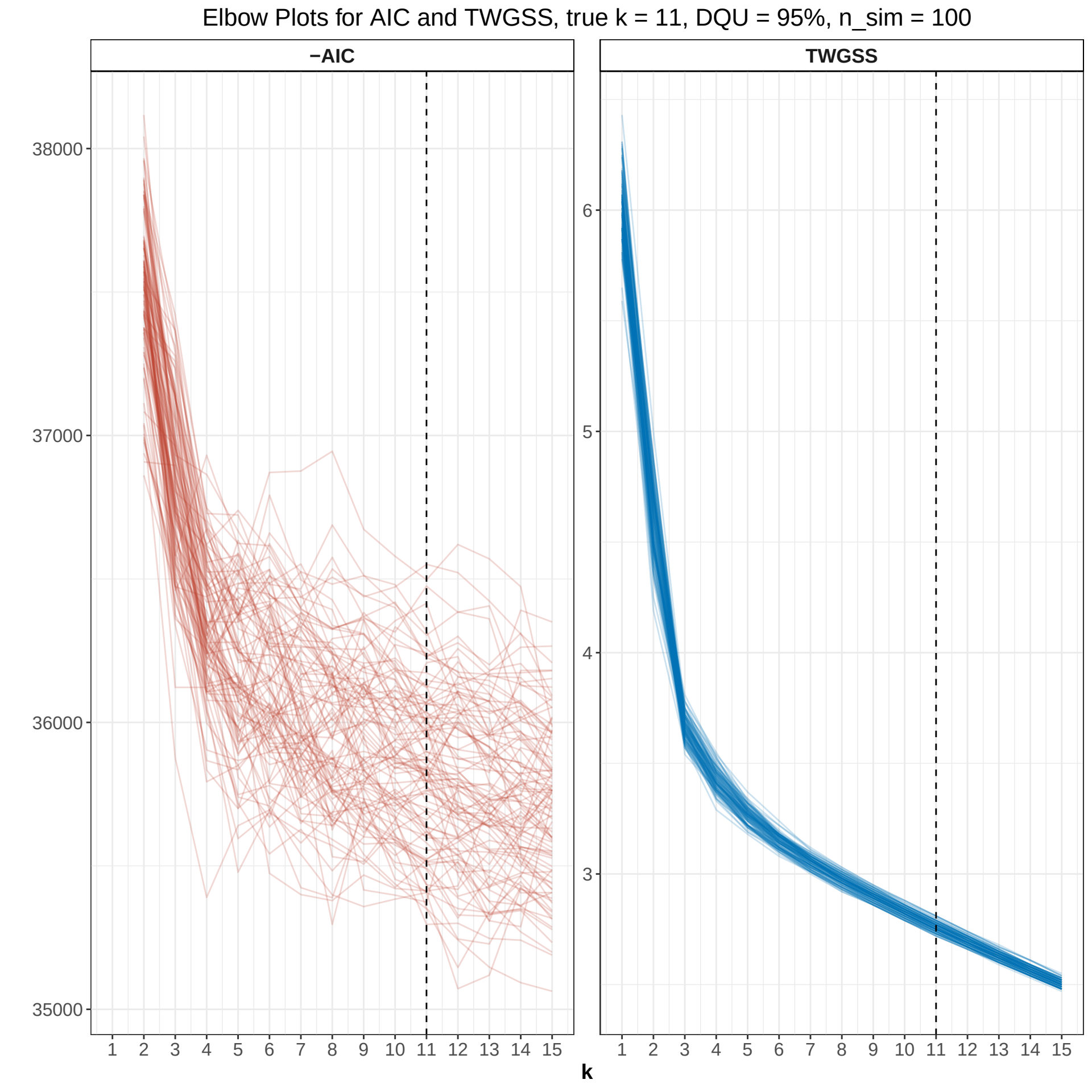
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 11, DQU = 92.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
35000
5
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 11, DQU = 95%, n_sim = 100
−AIC
TWGSS
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37000
36000
35000
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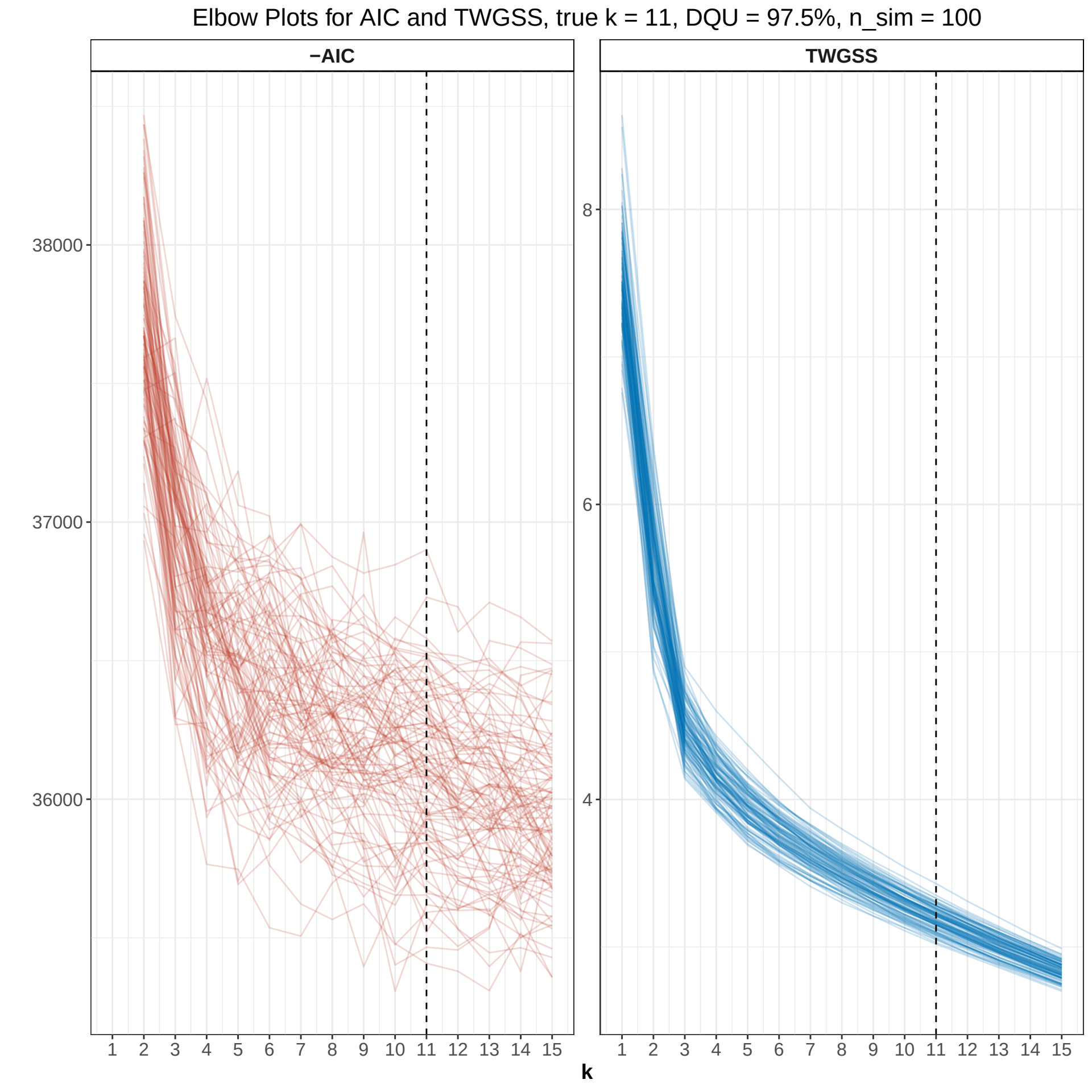
4
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k


Elbow Plots for AIC and TWGSS, true k = 11, DQU = 97.5%, n_sim = 100
−AIC
TWGSS
38000
37000
36000
8
6
4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
k