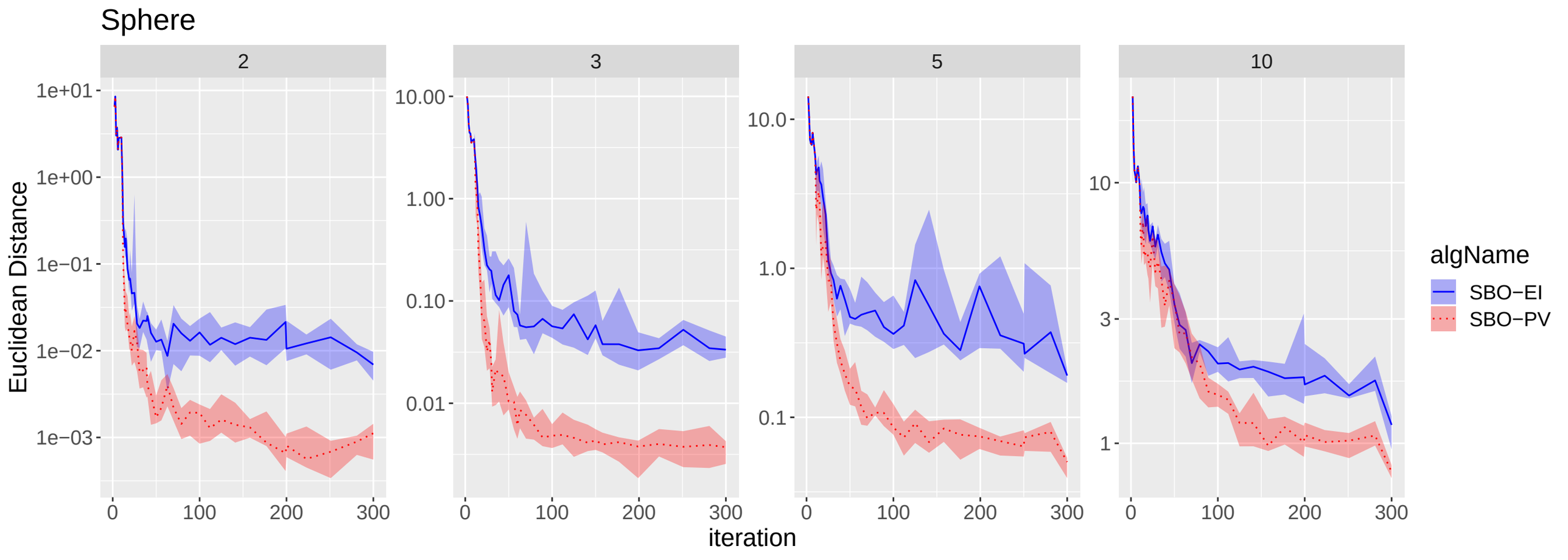
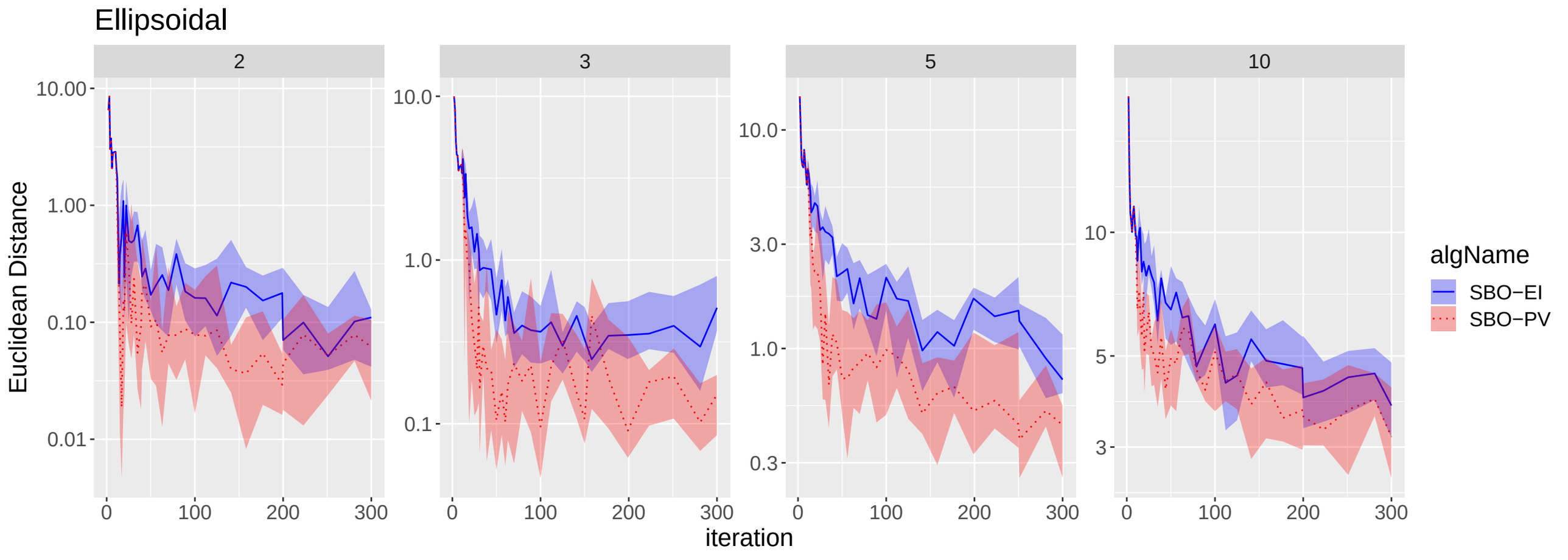
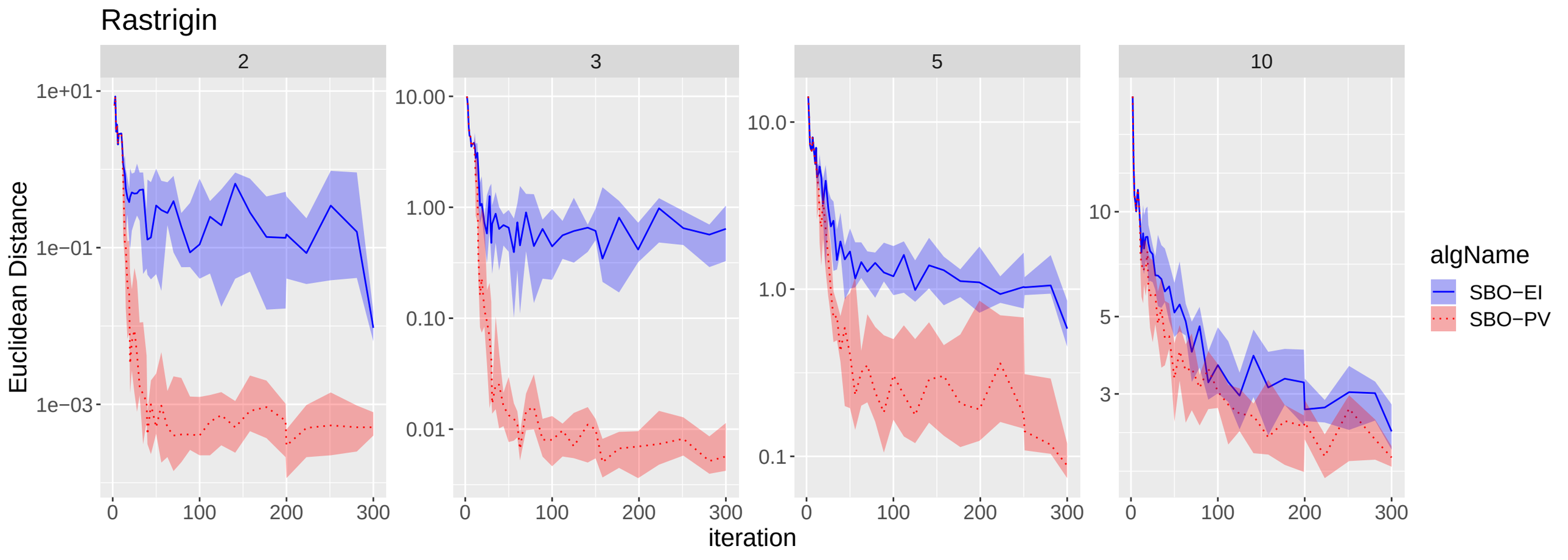
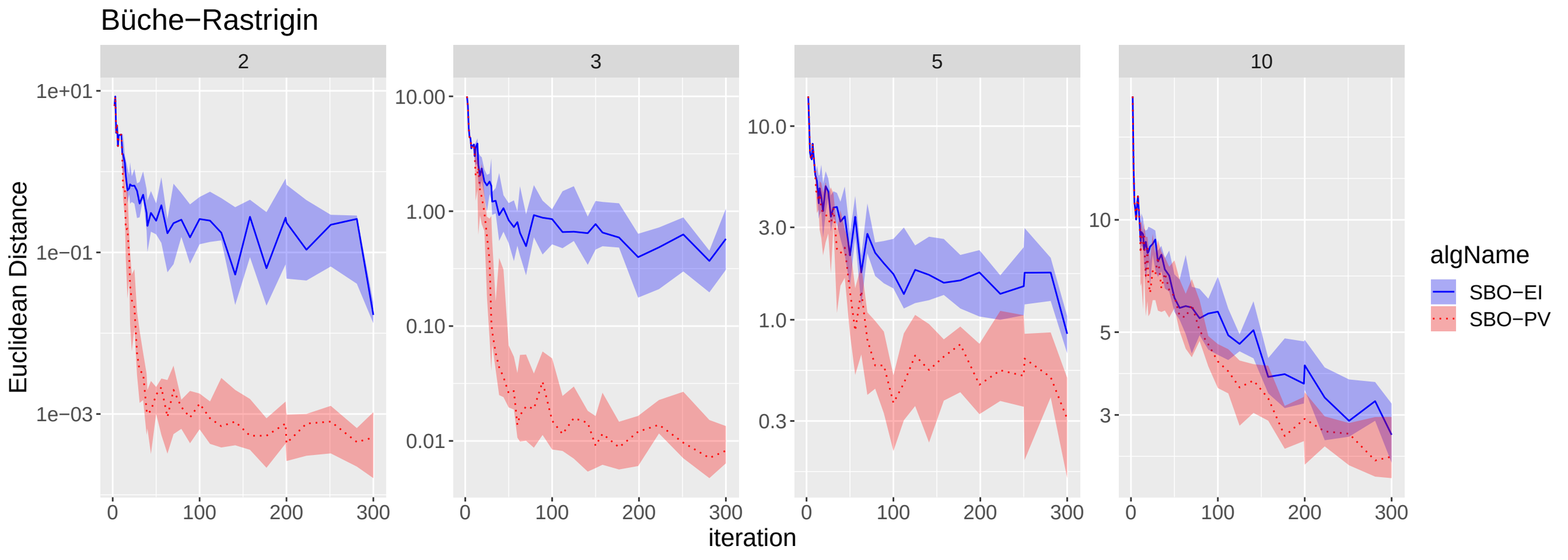
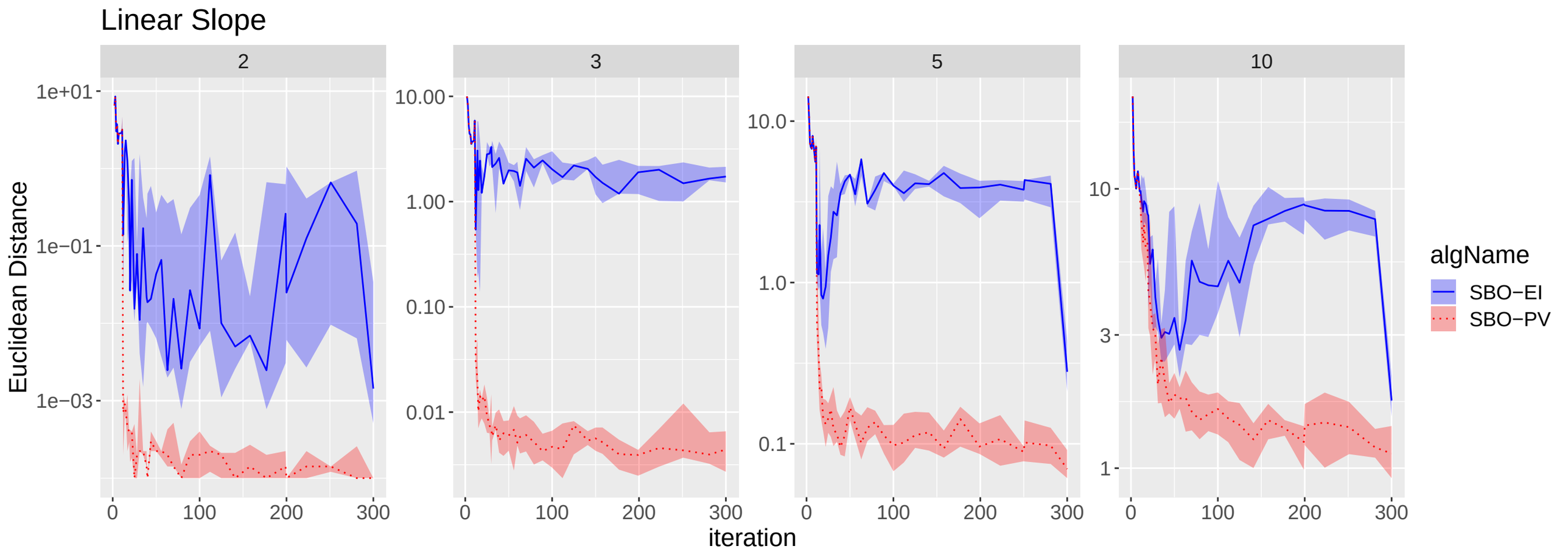
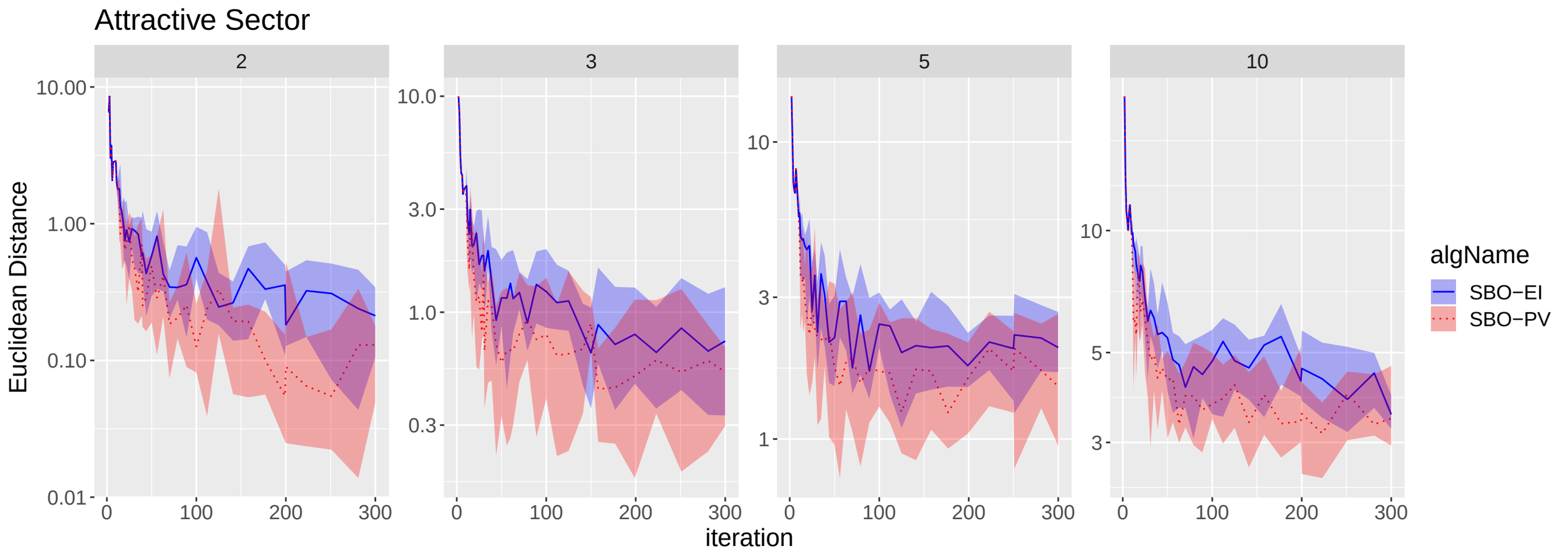

Sphere
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

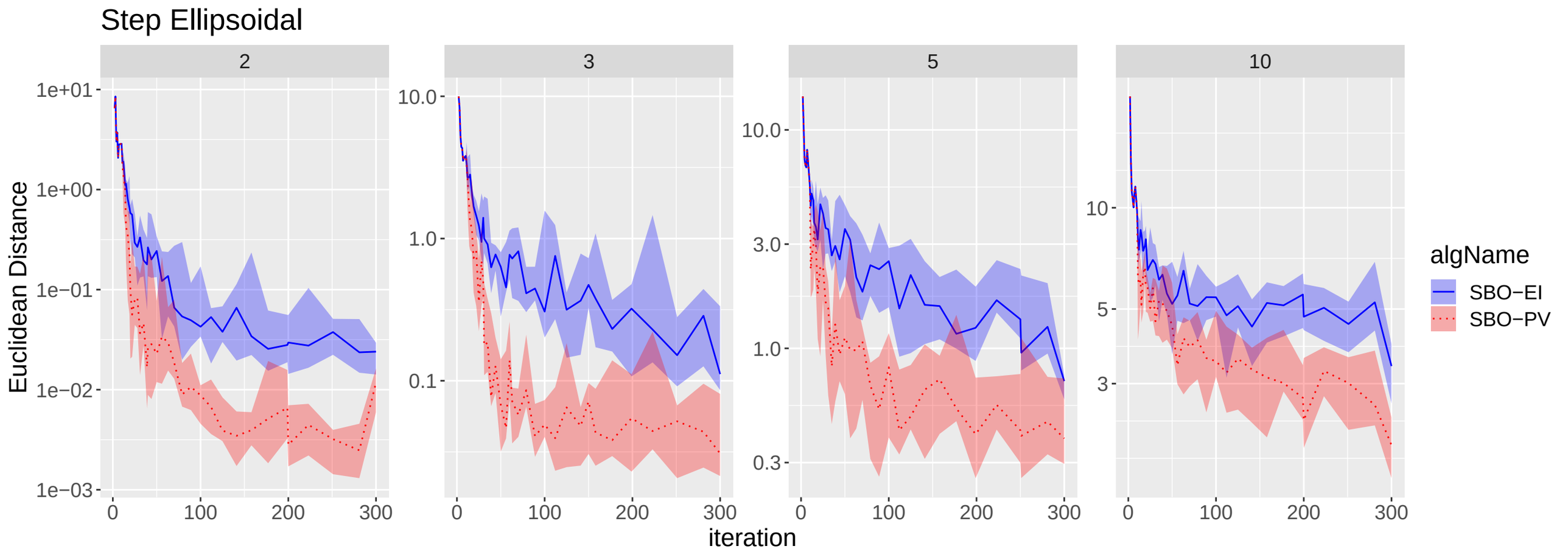

Ellipsoidal
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

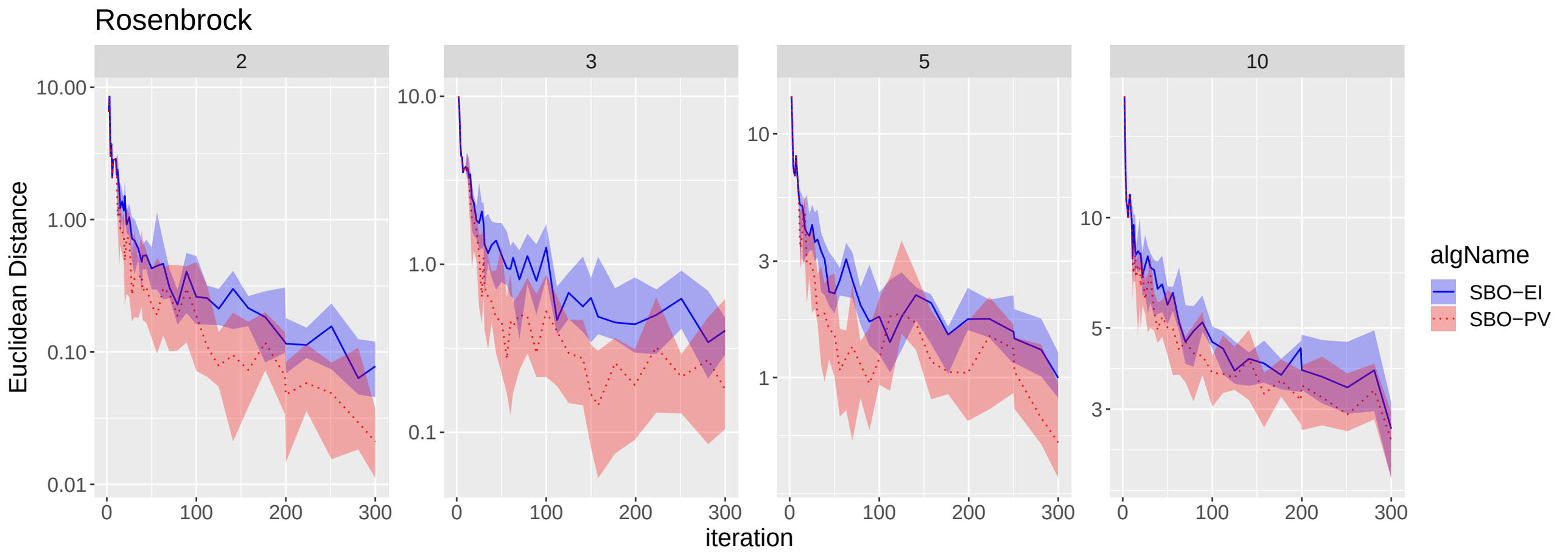

Rastrigin
2
3
5
10
Euclidean Distance
1e+01
1e−01
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

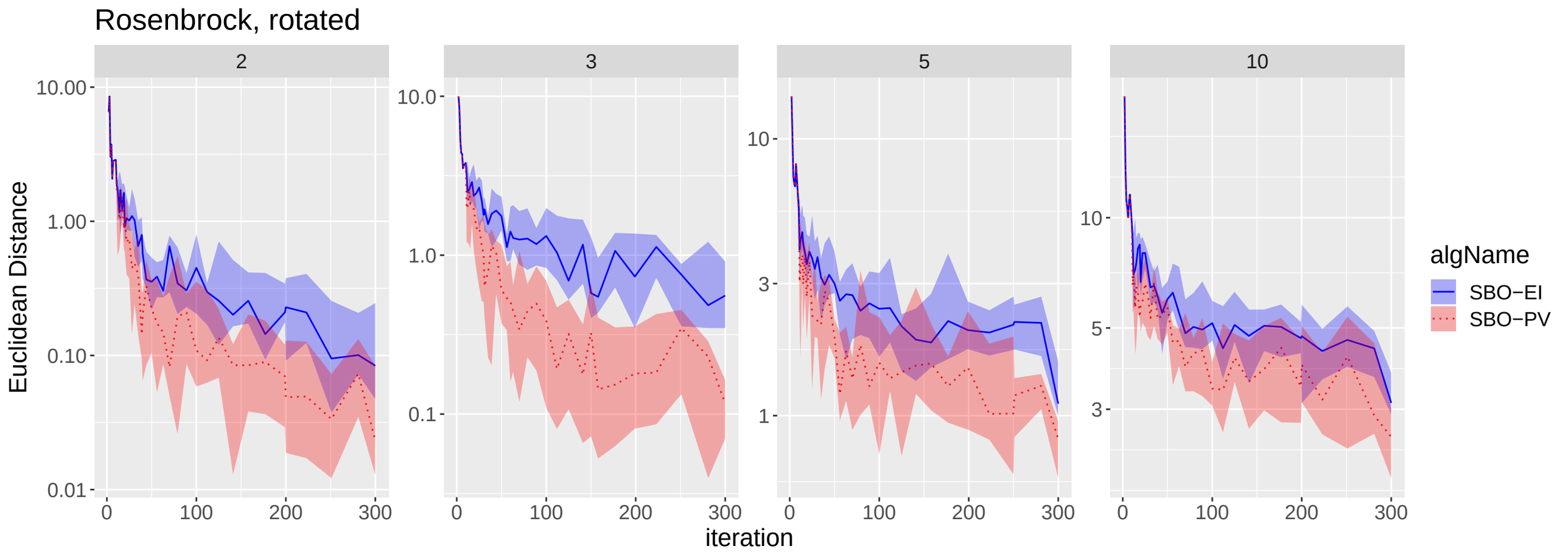

Büche−Rastrigin
2
3
5
10
Euclidean Distance
1e+01
1e−01
1e−03
10.00
1.00
0.10
0.01
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

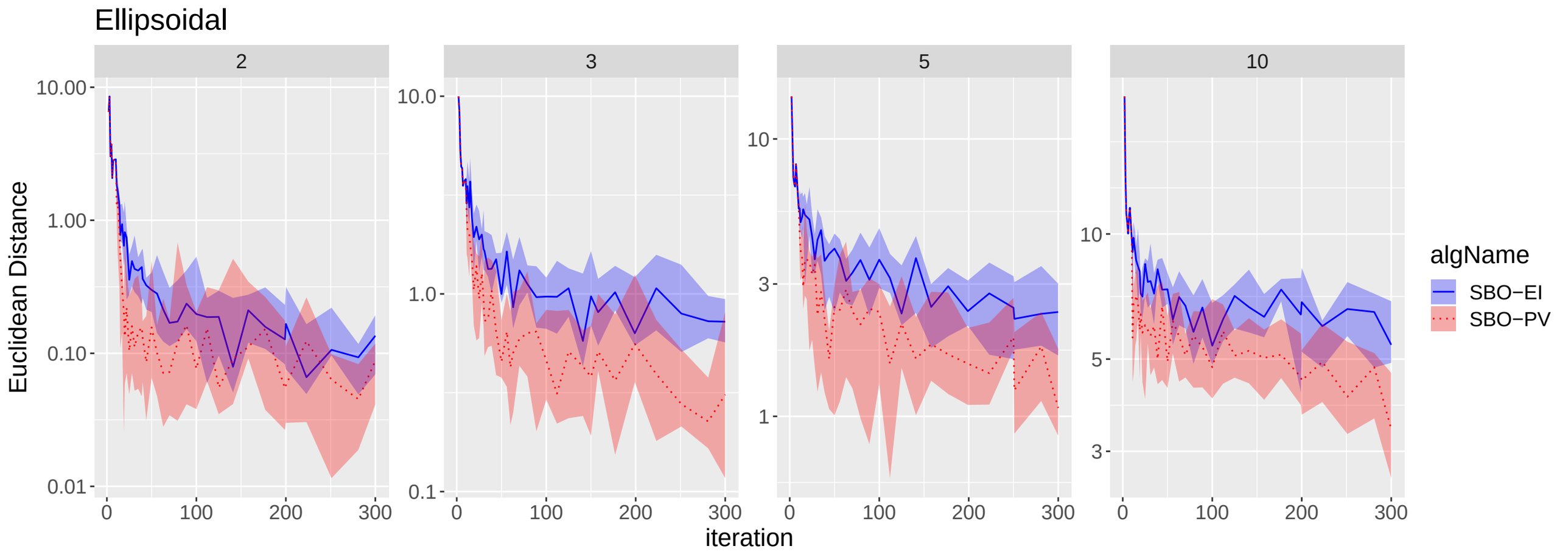

Linear Slope
2
3
5
10
Euclidean Distance
1e+01
1e−01
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

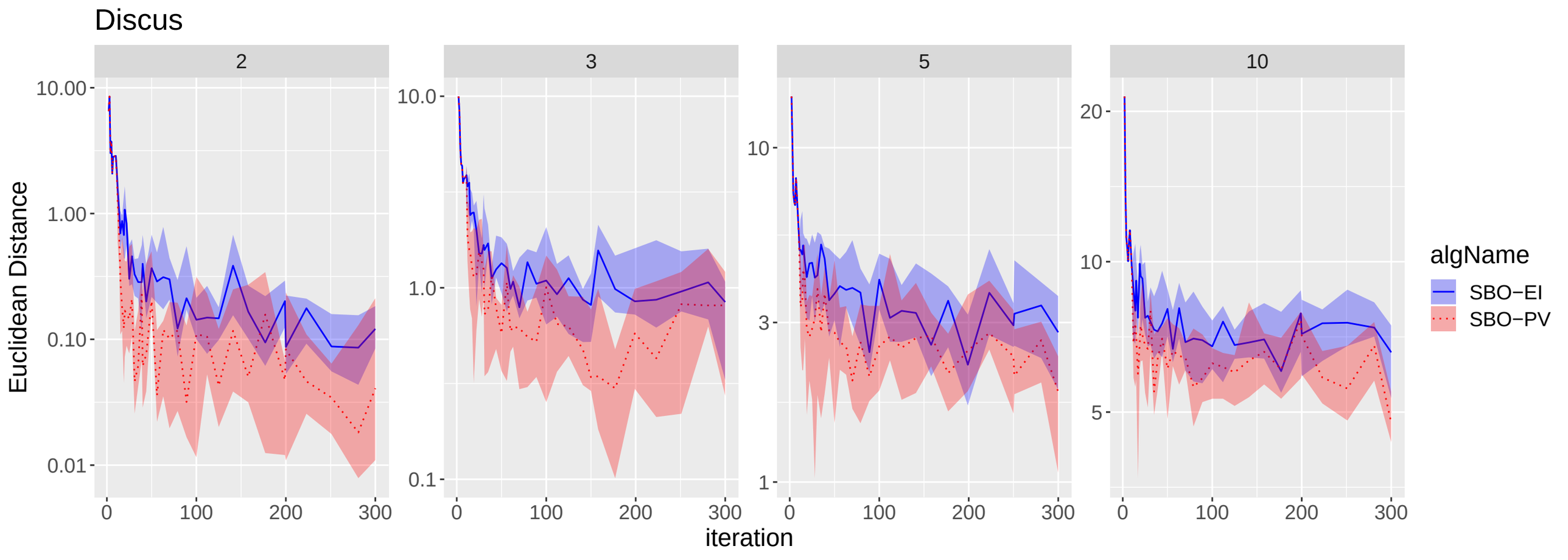

Attractive Sector
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
3.0
1.0
0.3
10
3
1
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

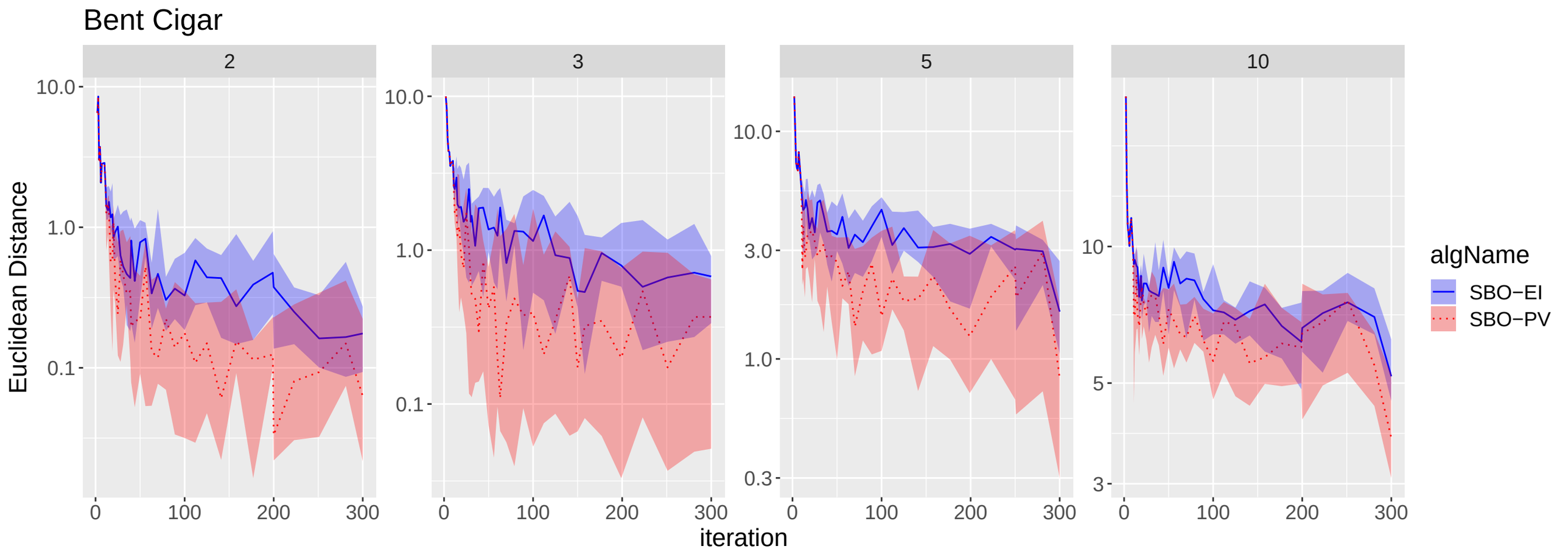

Step Ellipsoidal
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.0
1.0
0.1
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

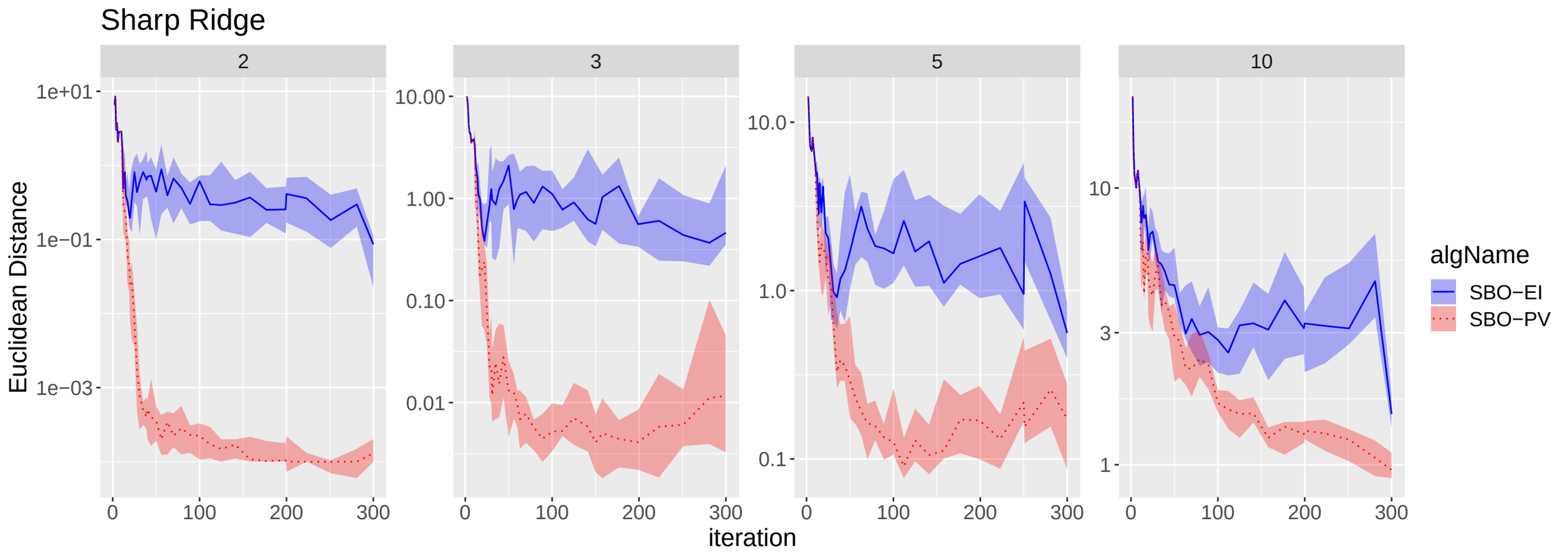

Rosenbrock
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
5
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

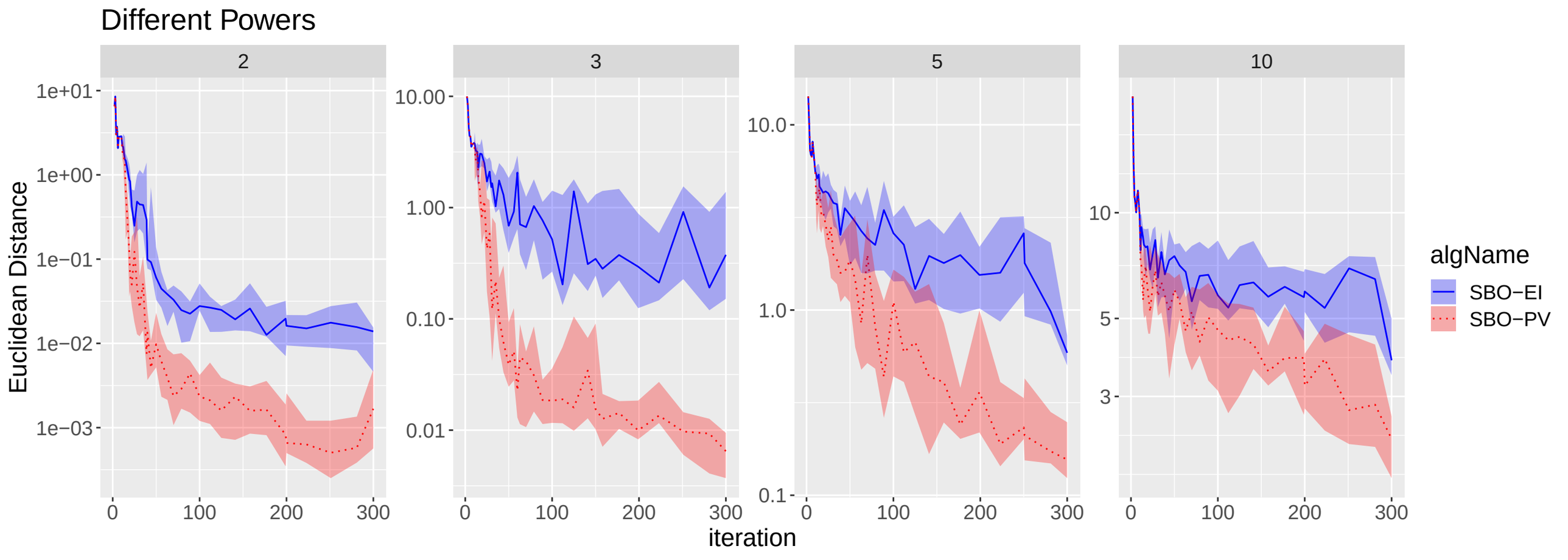

Rosenbrock, rotated
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
5
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

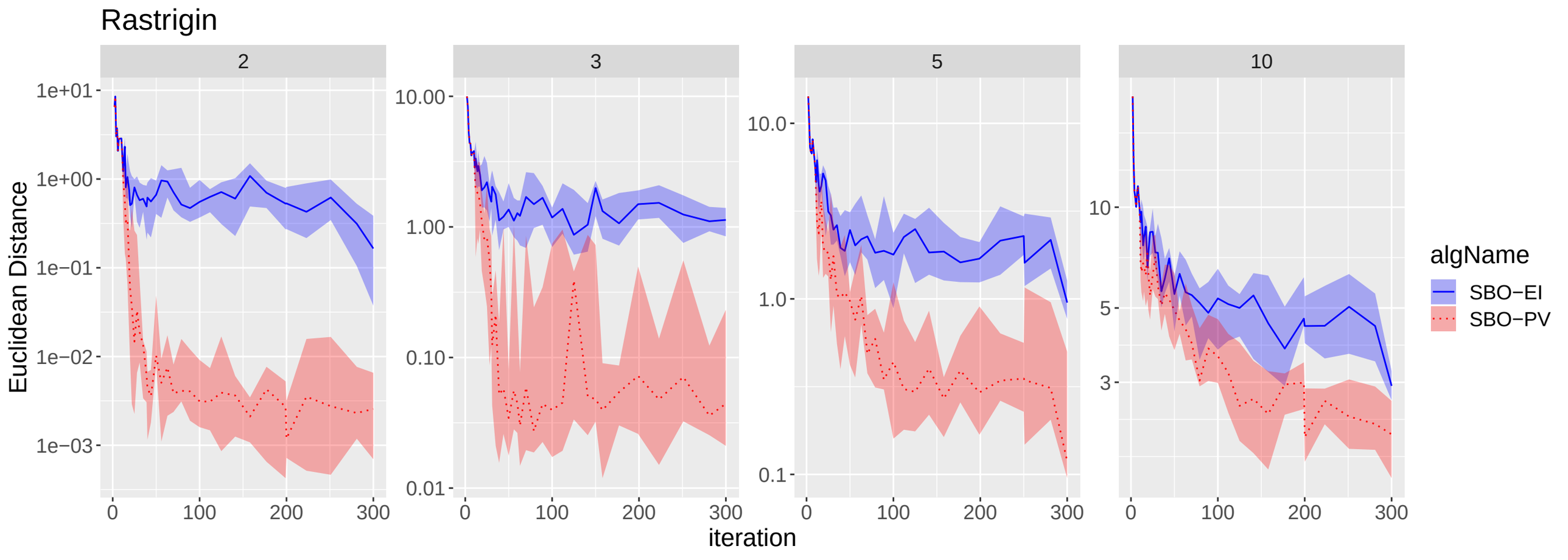

Ellipsoidal
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
5
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

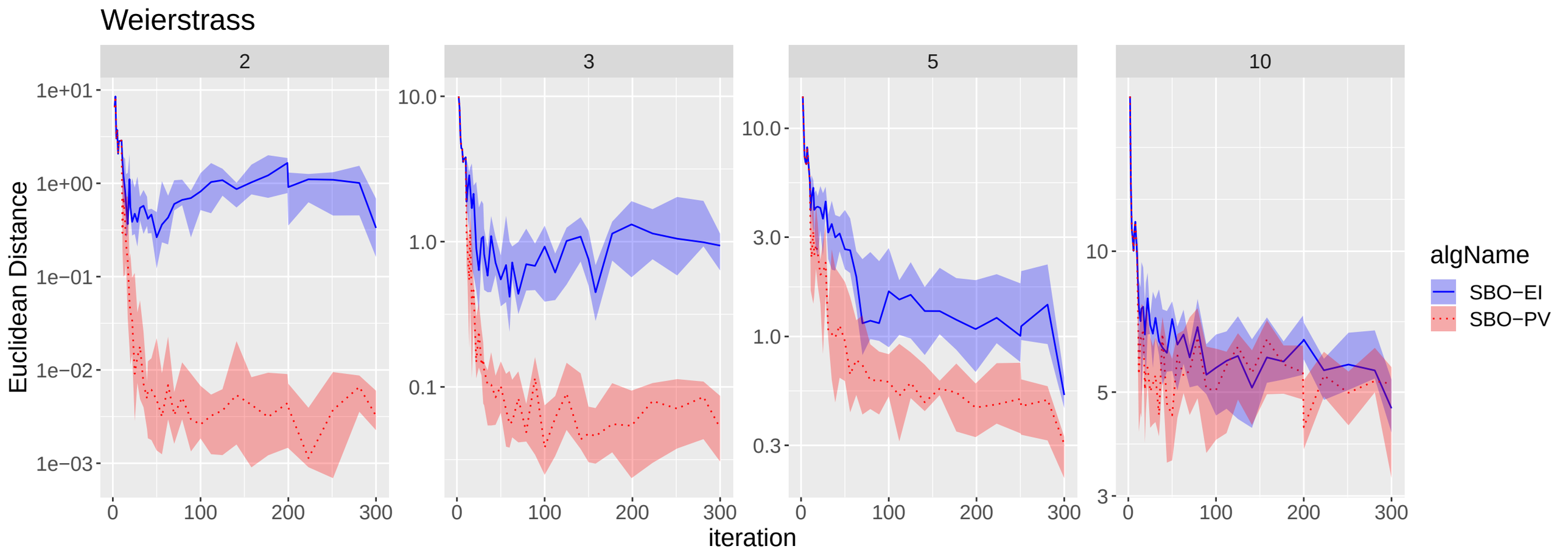

Discus
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
20
10
5
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

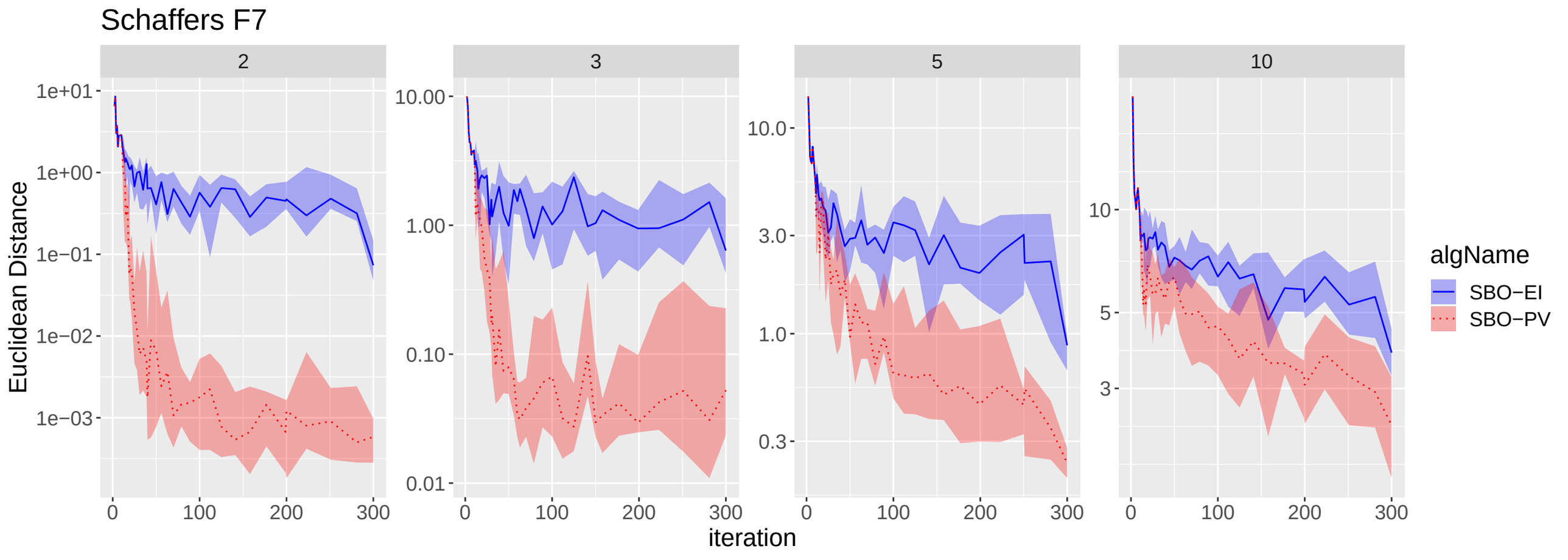

Bent Cigar
2
3
5
10
Euclidean Distance
iteration
algName
SBO−EI
SBO−PV

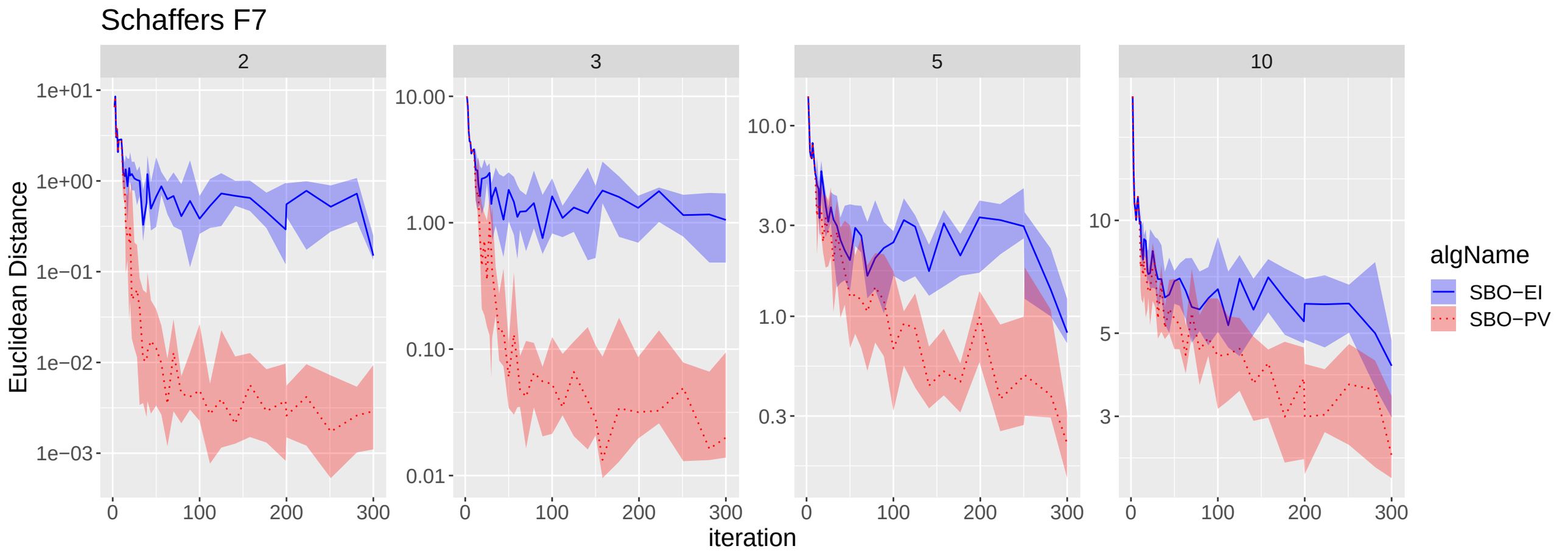

Sharp Ridge
2
3
5
10
Euclidean Distance
1e+01
1e−01
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

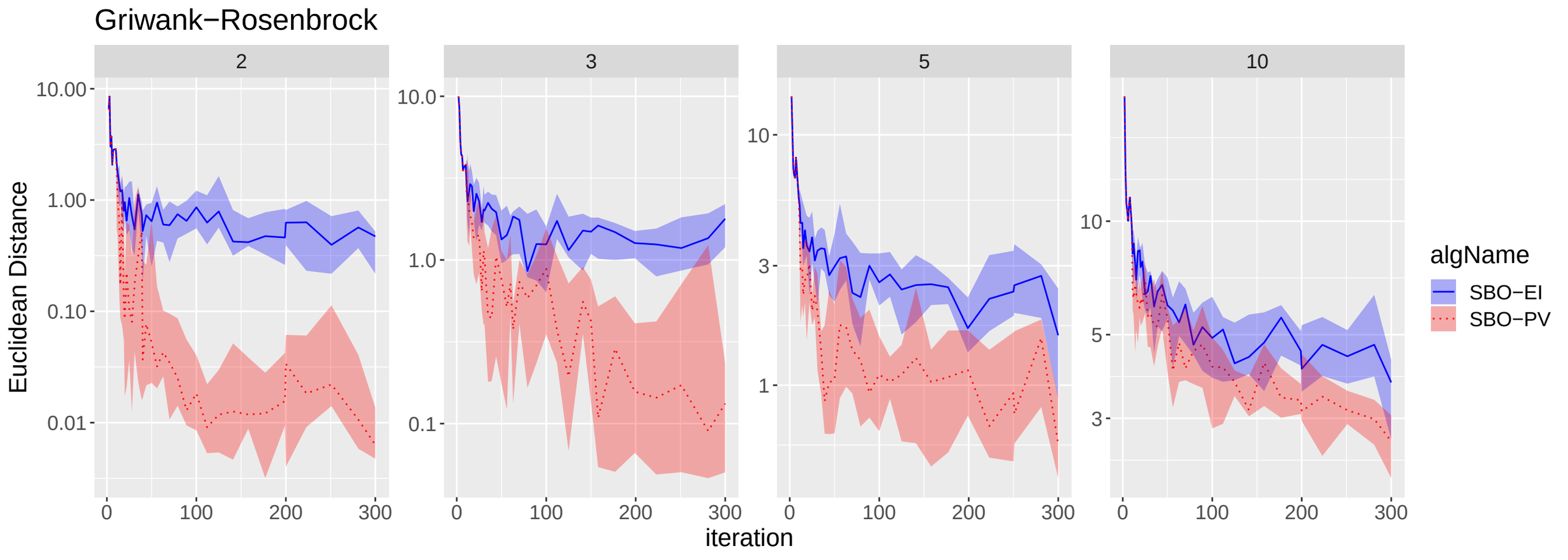

Different Powers
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

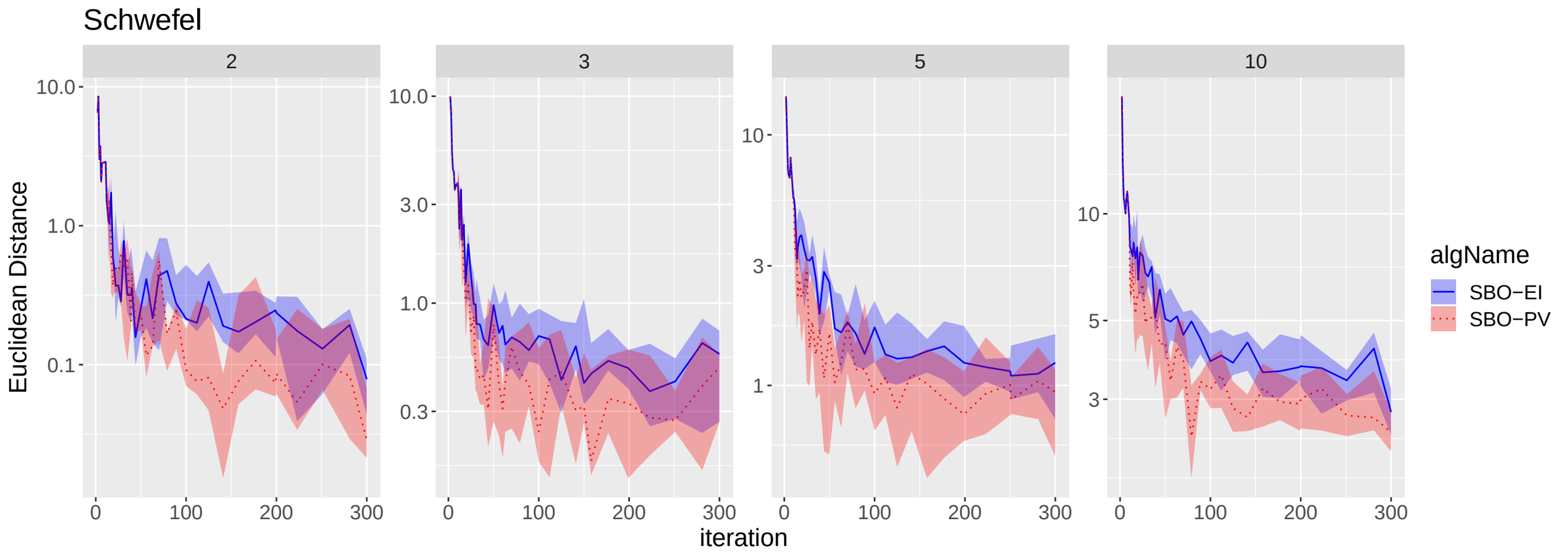

Rastrigin
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

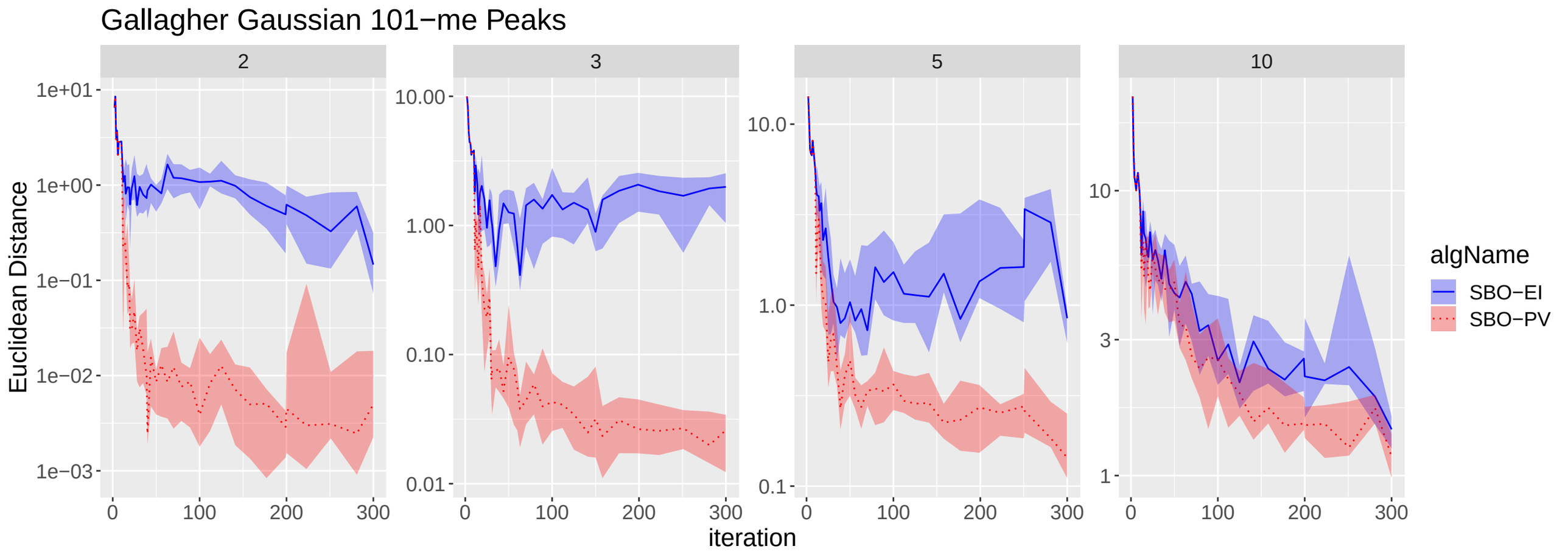

Weierstrass
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.0
1.0
0.1
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

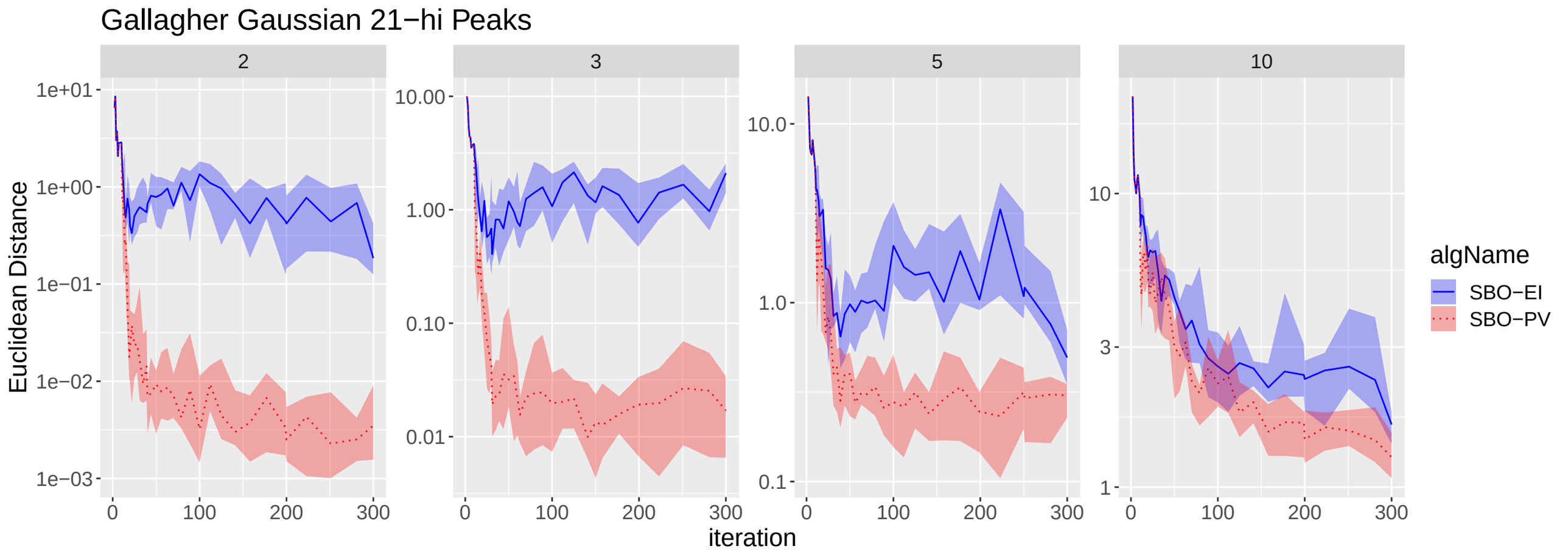

Schaffers F7
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

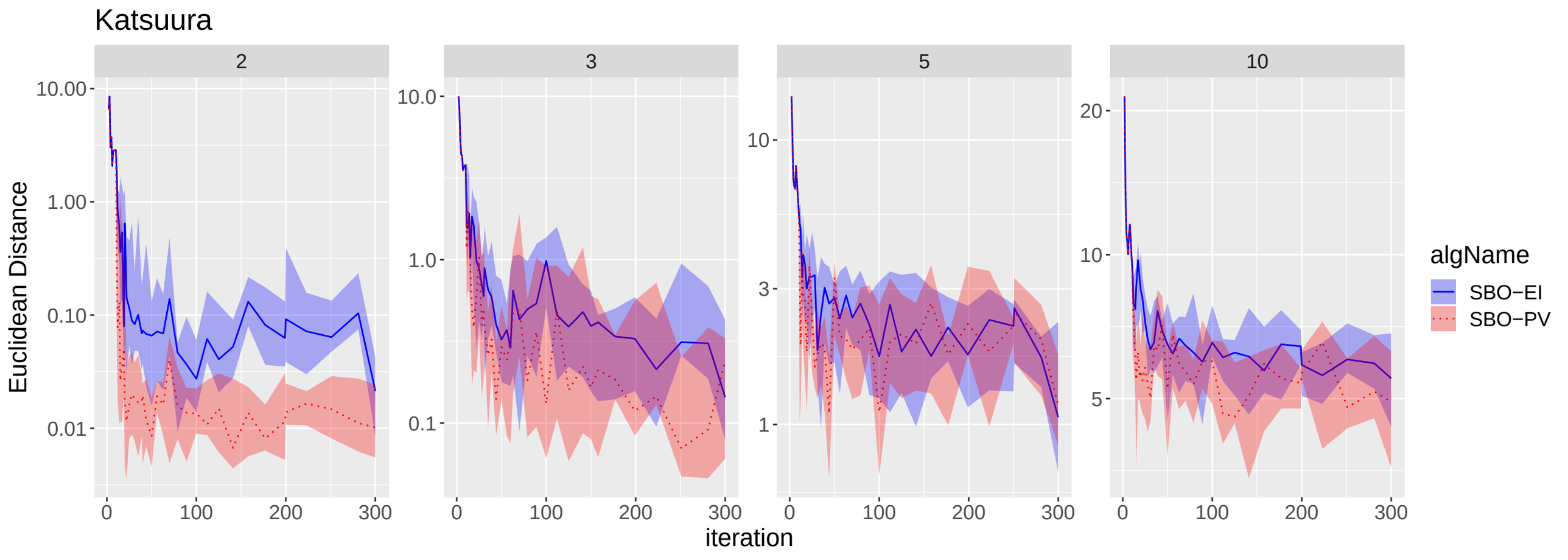

Schaffers F7
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV

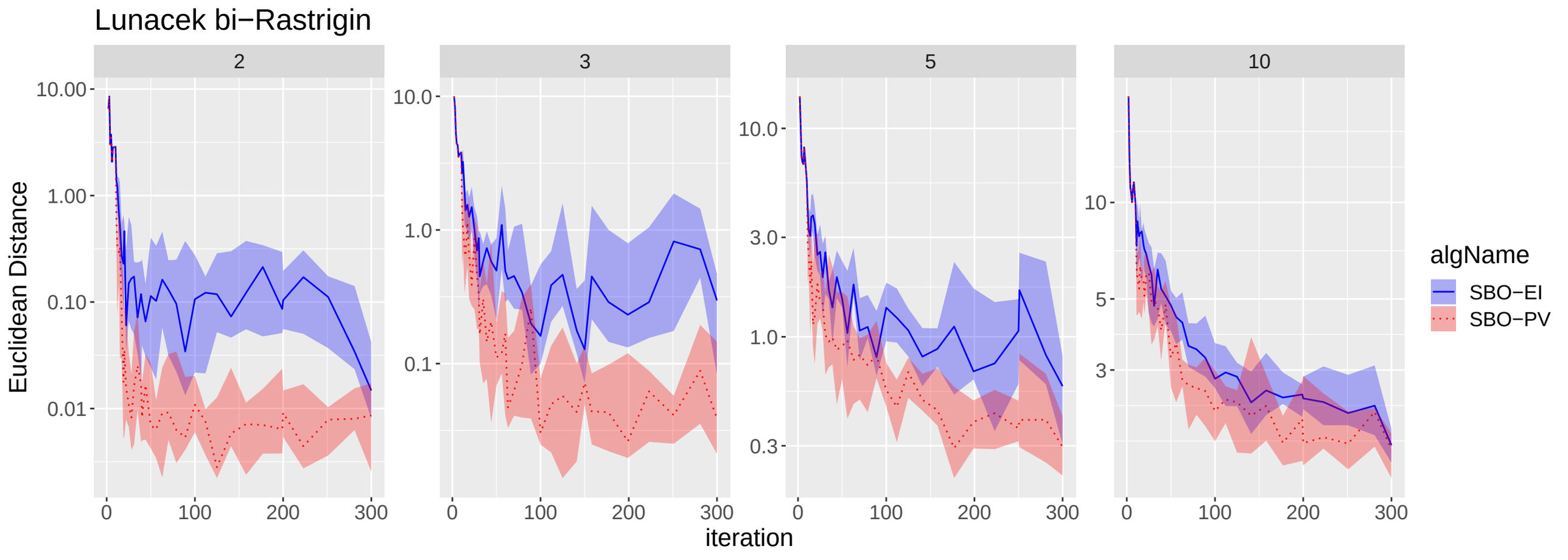

Griwank−Rosenbrock
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV


Schwefel
2
3
5
10
Euclidean Distance
10.0
1.0
0.1
10.0
3.0
1.0
0.3
10
3
1
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV


Gallagher Gaussian 101−me Peaks
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
0
100
200
300
iteration
algName
SBO−EI
SBO−PV


Gallagher Gaussian 21−hi Peaks
2
3
5
10
Euclidean Distance
1e+01
1e+00
1e−01
1e−02
1e−03
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
0
100
200
300
iteration
algName
SBO−EI
SBO−PV


Katsuura
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10
3
1
20
10
5
0
100
200
300
iteration
algName
SBO−EI
SBO−PV


Lunacek bi−Rastrigin
2
3
5
10
Euclidean Distance
10.00
1.00
0.10
0.01
10.0
1.0
0.1
10.0
3.0
1.0
0.3
10
5
3
0
100
200
300
iteration
algName
SBO−EI
SBO−PV