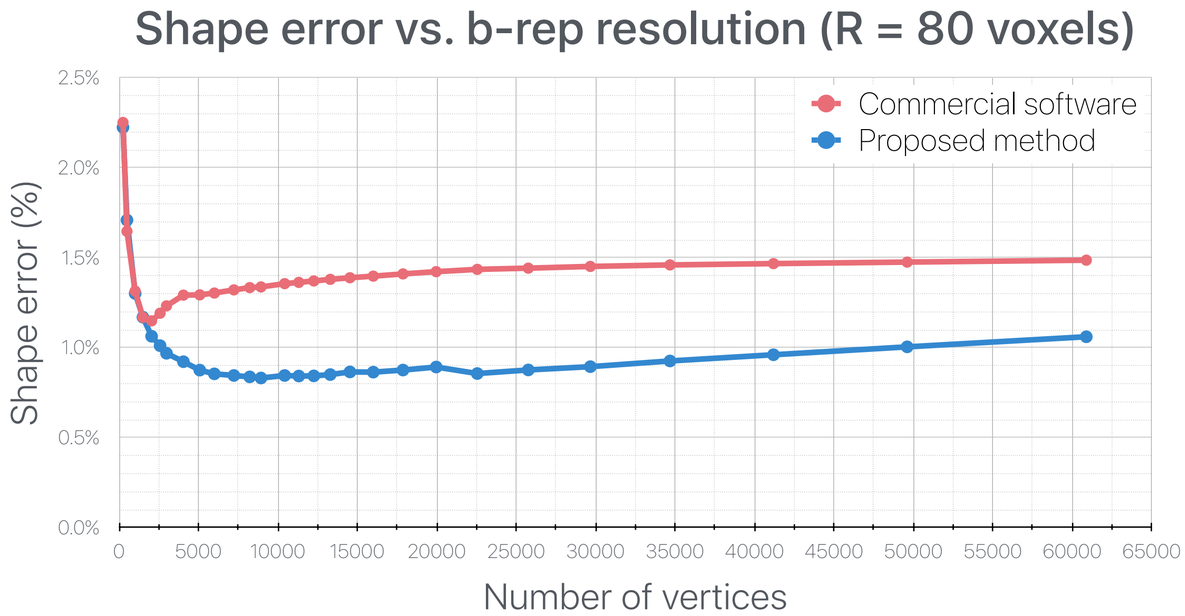
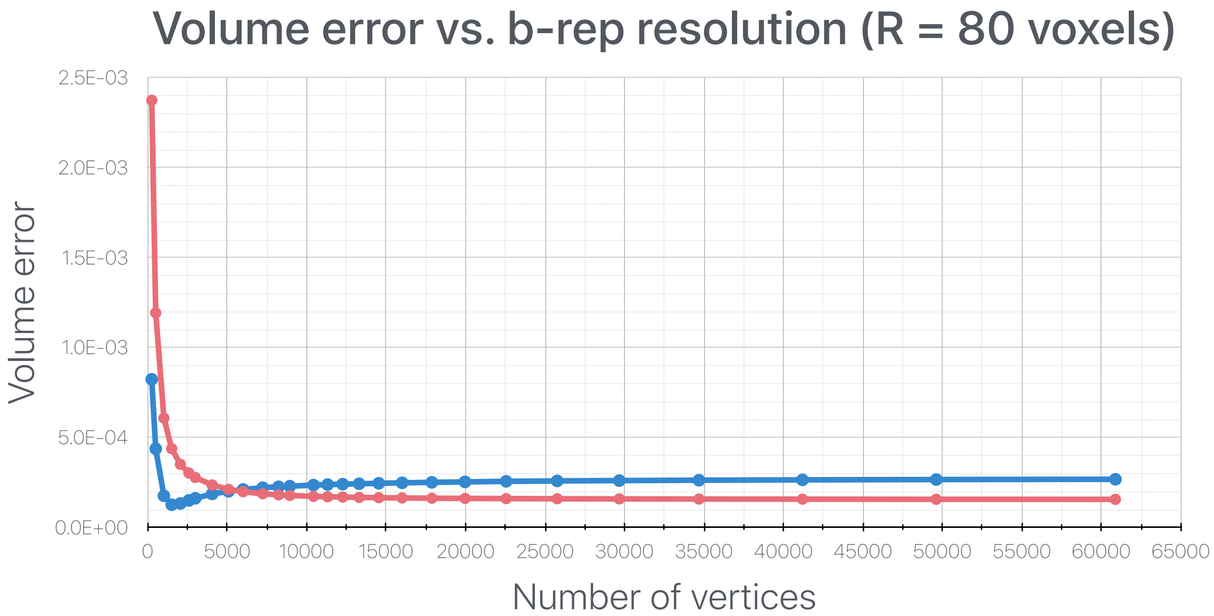
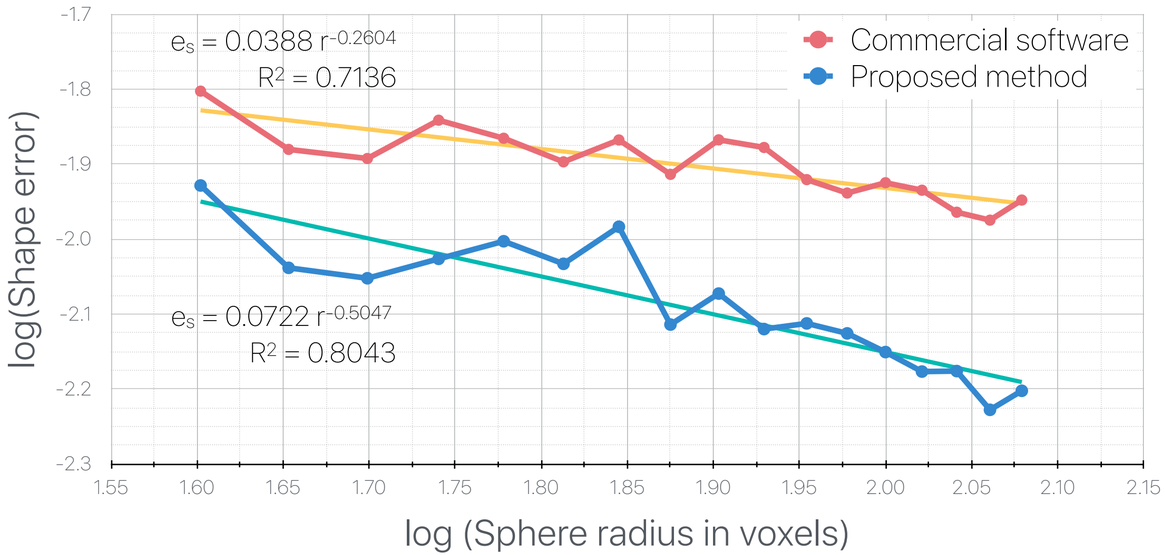
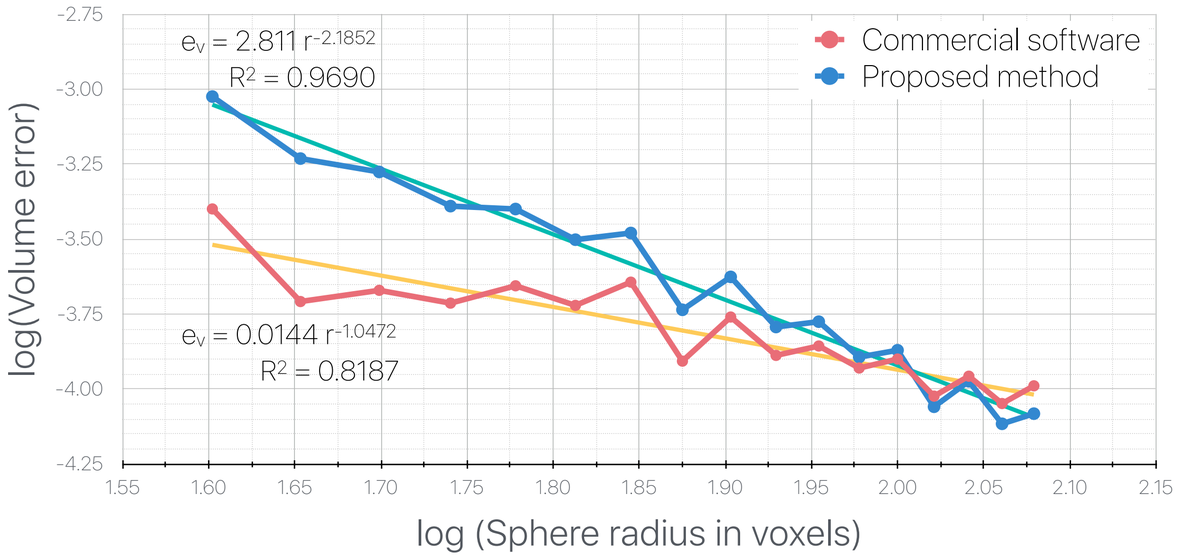

Shape error vs. b-rep resolution (R = 80 voxels)
Commercial software
Proposed method
Shape error (%)
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000
65000
Number of vertices


Volume error vs. b-rep resolution (R = 80 voxels)
Volume error
2.5E-03
2.0E-03
1.5E-03
1.0E-03
5.0E-04
0.0E+00
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000
65000
Number of vertices


Shape error vs. sphere radius (n = 10428)
$e_s = 0.0388\ r^{-0.2604}$
$R^2 = 0.7136$
$e_s = 0.0722\ r^{-0.5047}$
$R^2 = 0.8043$
Commercial software
Proposed method
log(Shape error)
-1.7
-1.8
-1.9
-2.0
-2.1
-2.2
-2.3
1.55
1.60
1.65
1.70
1.75
1.80
1.85
1.90
1.95
2.00
2.05
2.10
2.15
log (Sphere radius in voxels)


Volume error vs. sphere radius (n = 10428)
$e_v = 2.811\ r^{-2.1852}$
$R^2 = 0.9690$
$e_v = 0.0144\ r^{-1.0472}$
$R^2 = 0.8187$
Commercial software
Proposed method
log(Volume error)
-2.75
-3.00
-3.25
-3.50
-3.75
-4.00
-4.25
1.55
1.60
1.65
1.70
1.75
1.80
1.85
1.90
1.95
2.00
2.05
2.10
2.15
log (Sphere radius in voxels)