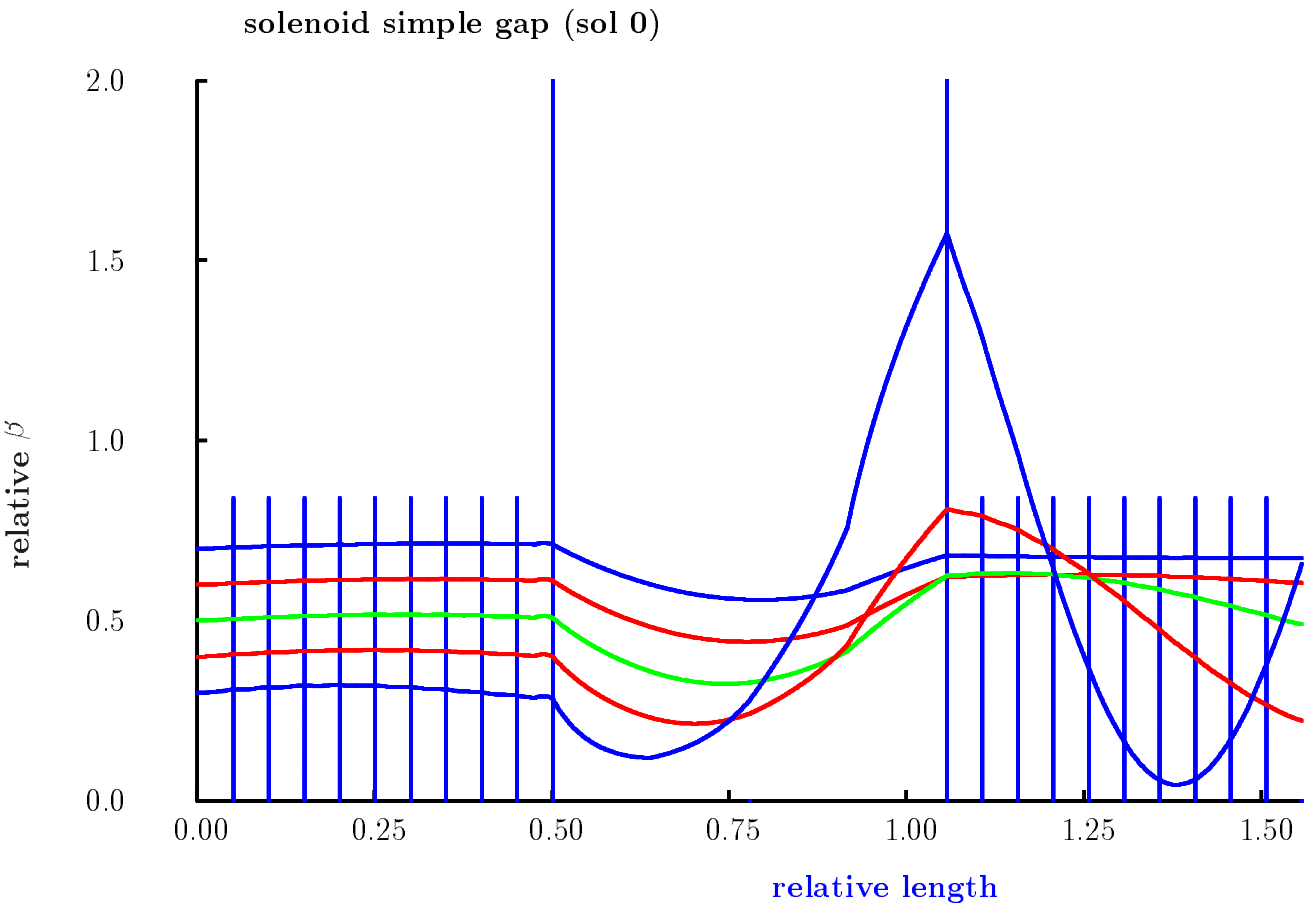
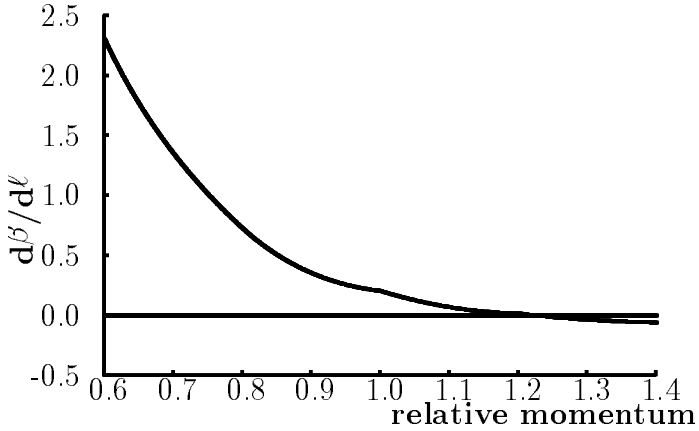
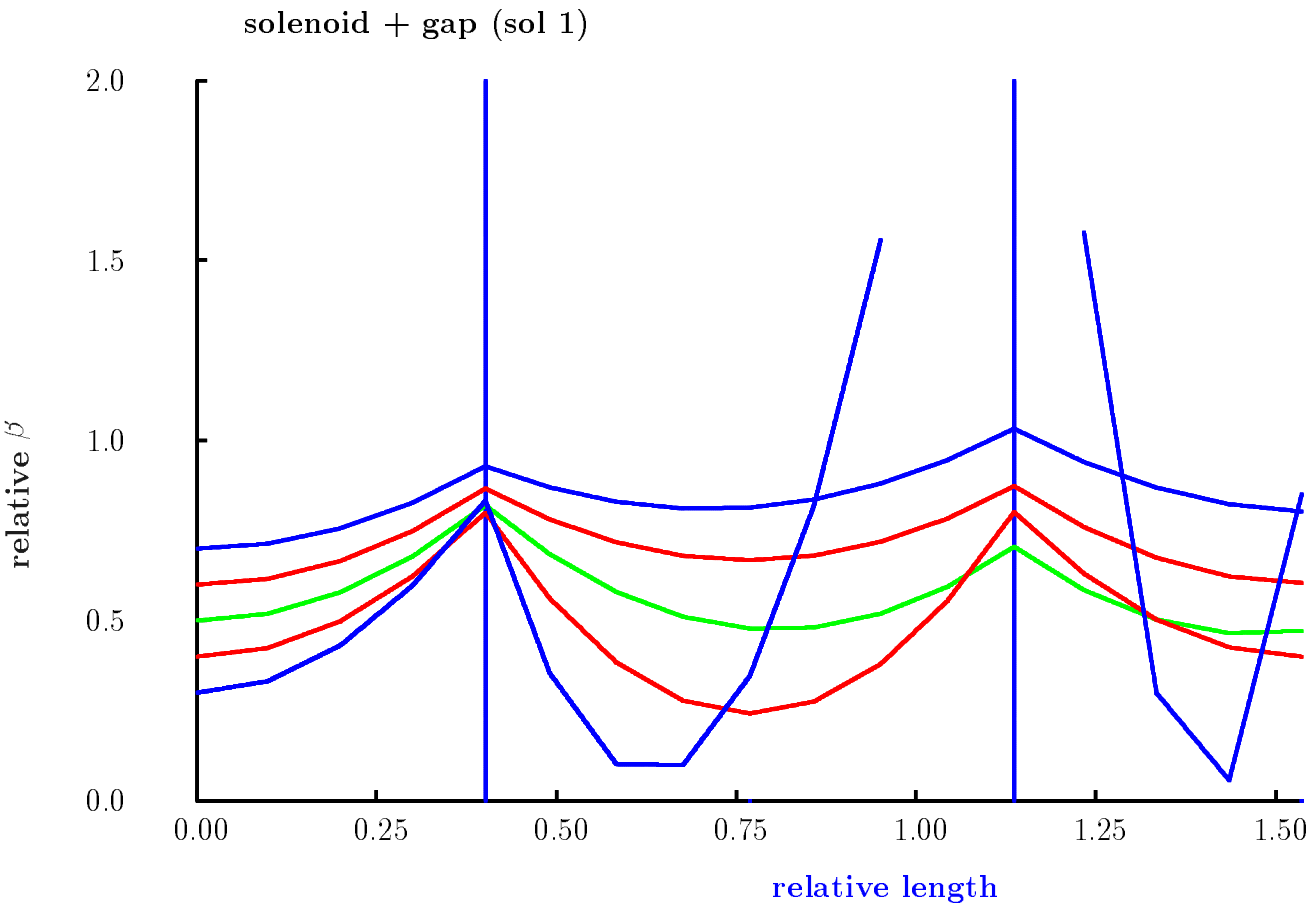
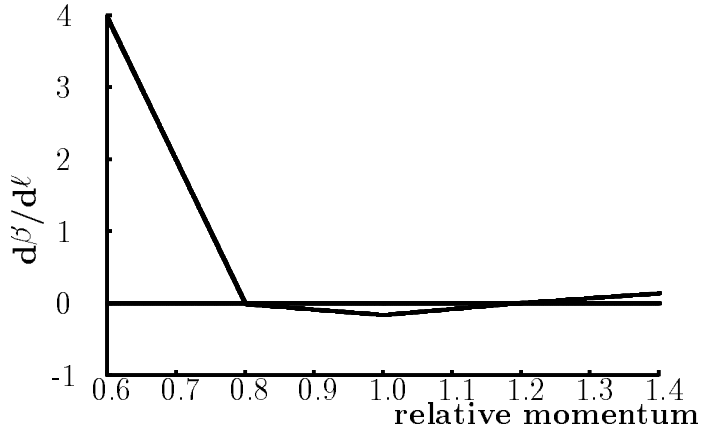
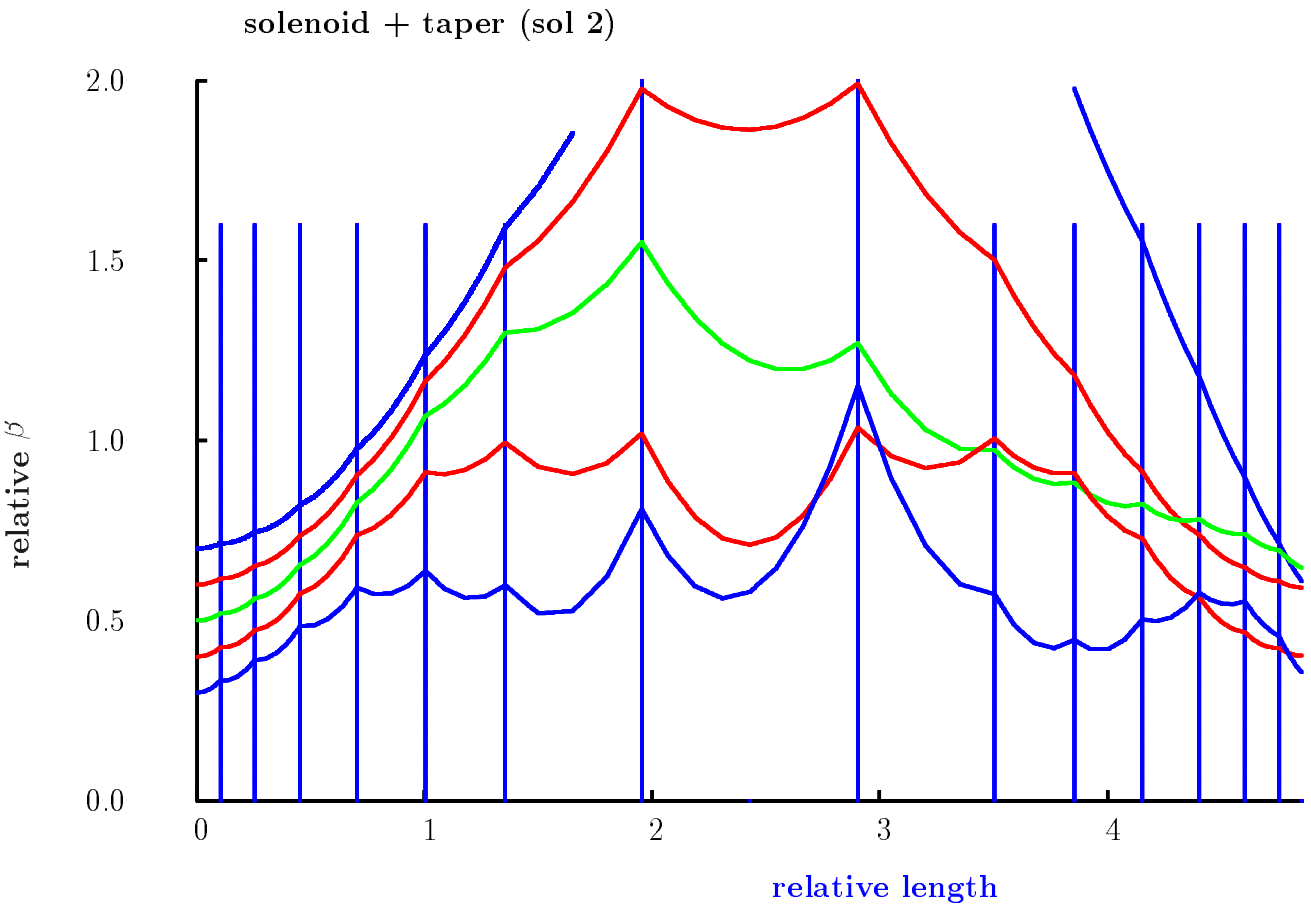
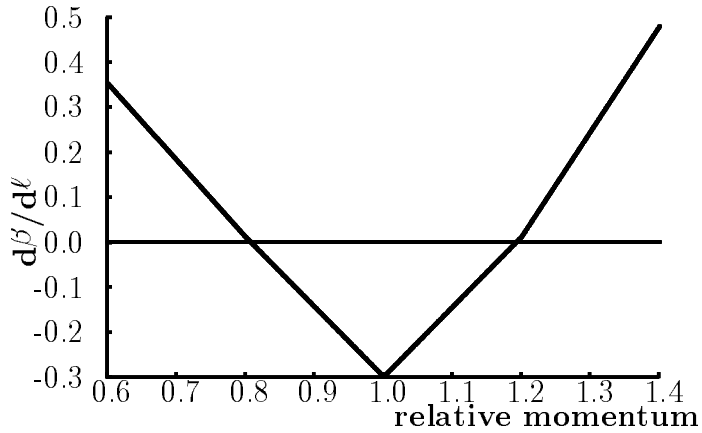

solenoid simple gap (sol 0)
relative β
2.0
1.5
1.0
0.5
0.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
relative length

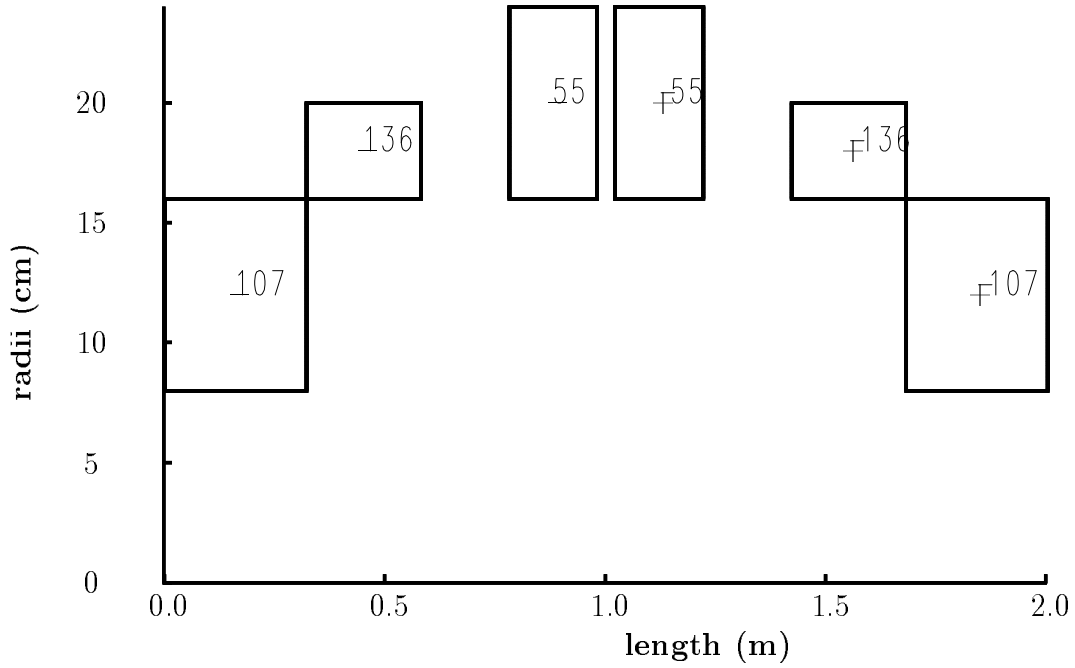

dβ/dℓ
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
relative momentum

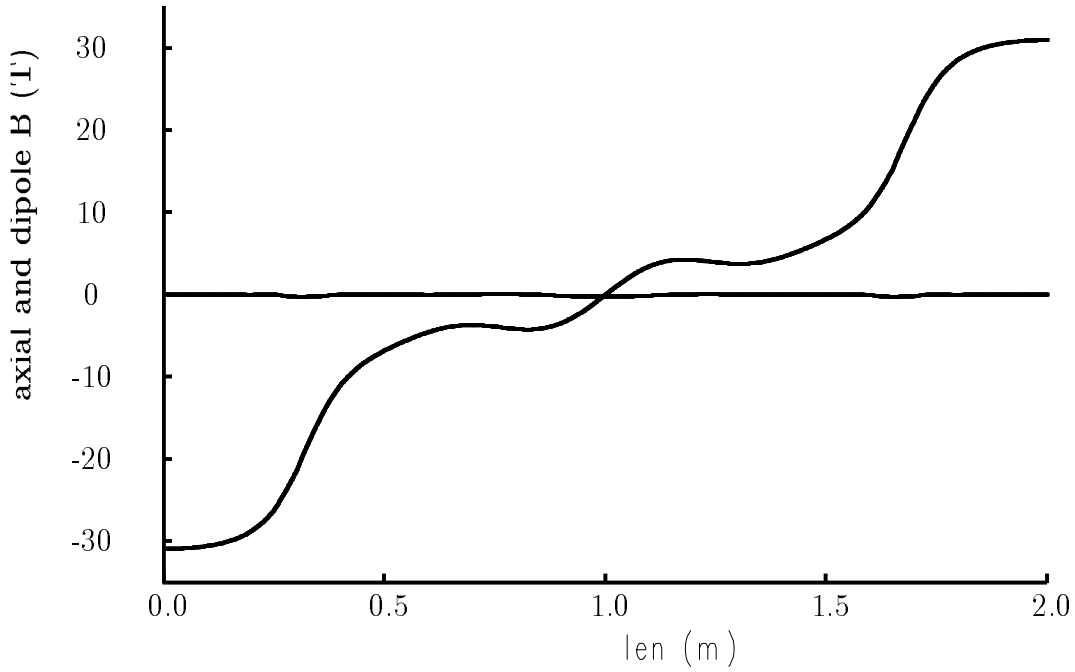

solenoid + gap (sol 1)
relative β
2.0
1.5
1.0
0.5
0.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
relative length

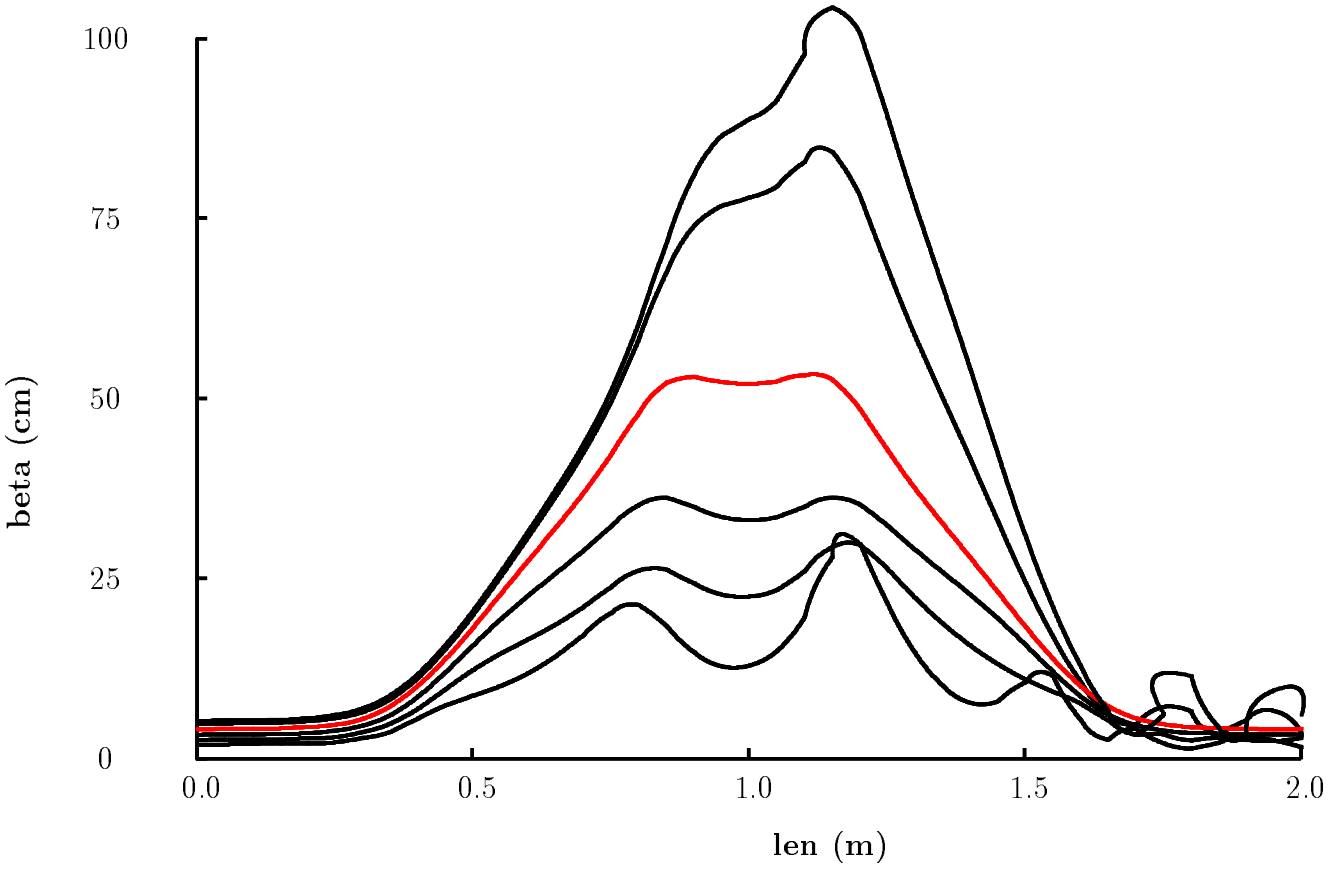

dβ/dℓ
4
3
2
1
0
-1
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
relative momentum

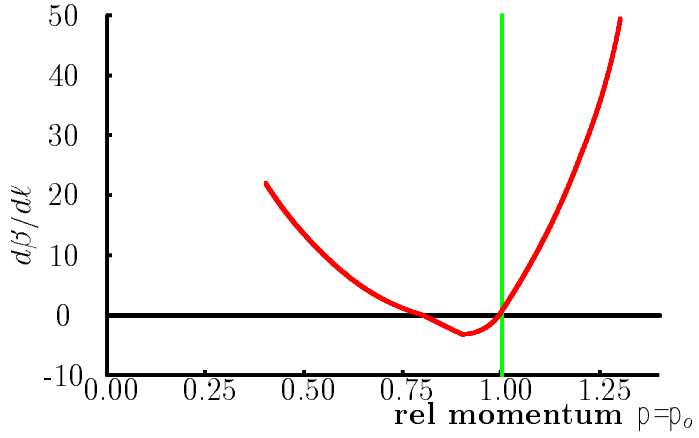

solenoid + taper (sol 2)
relative β
2.0
1.5
1.0
0.5
0.0
0
1
2
3
4
relative length

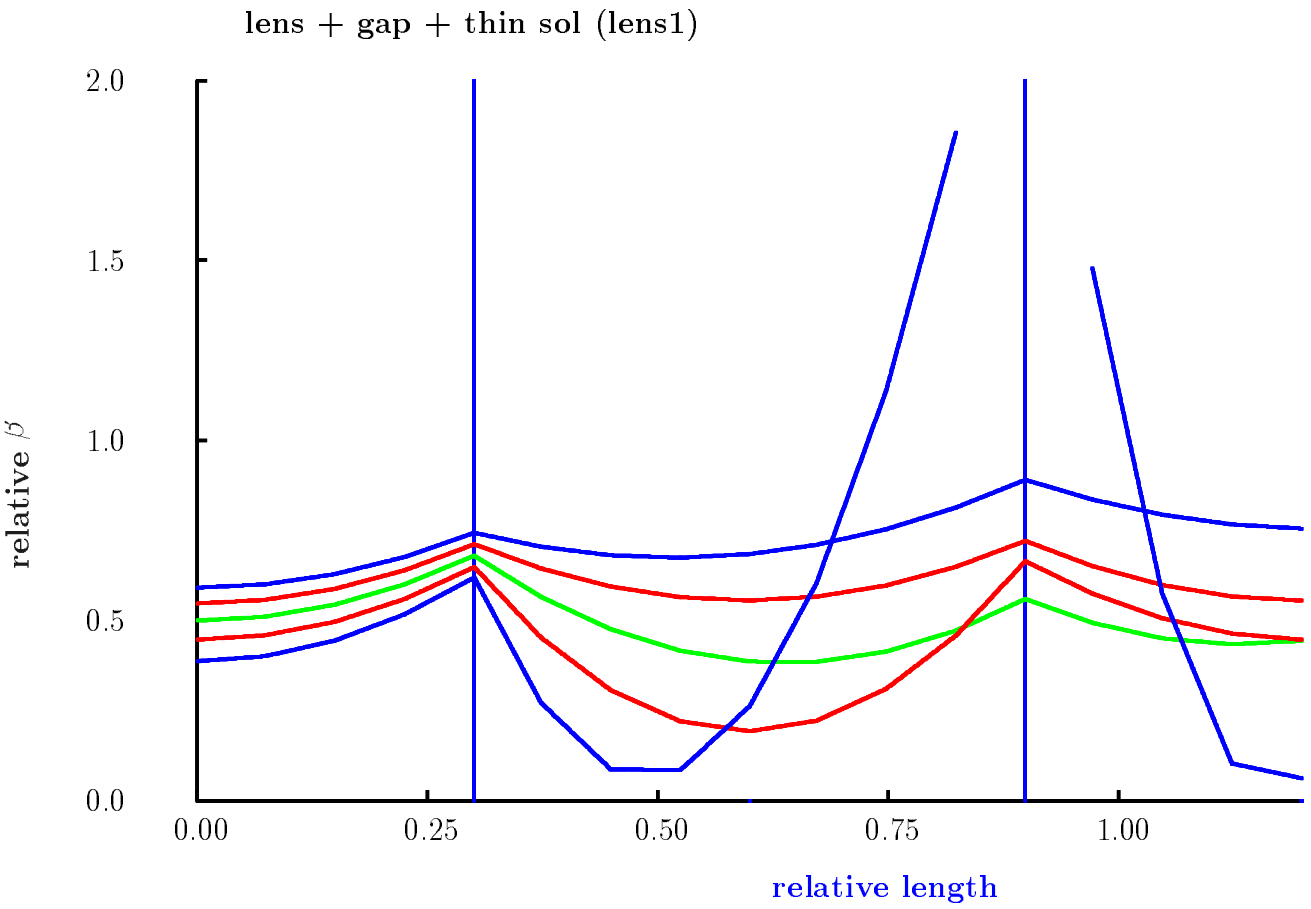

$d\beta/d\ell$
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
relative momentum

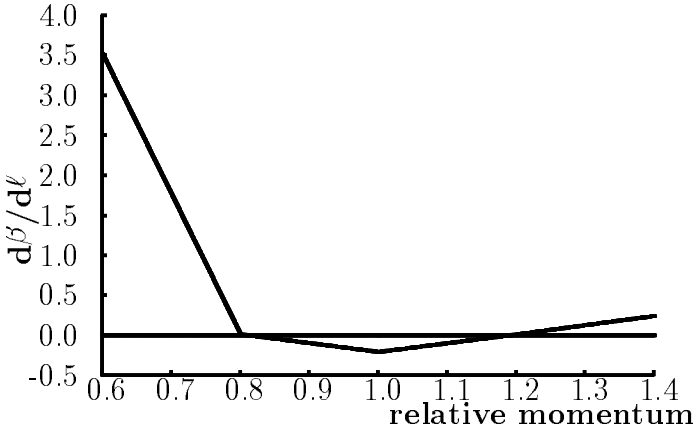

20
15
10
5
0
radii (cm)
0.0
0.5
1.0
1.5
2.0
length (m)
.136
.55
.55
.136
.107
.107

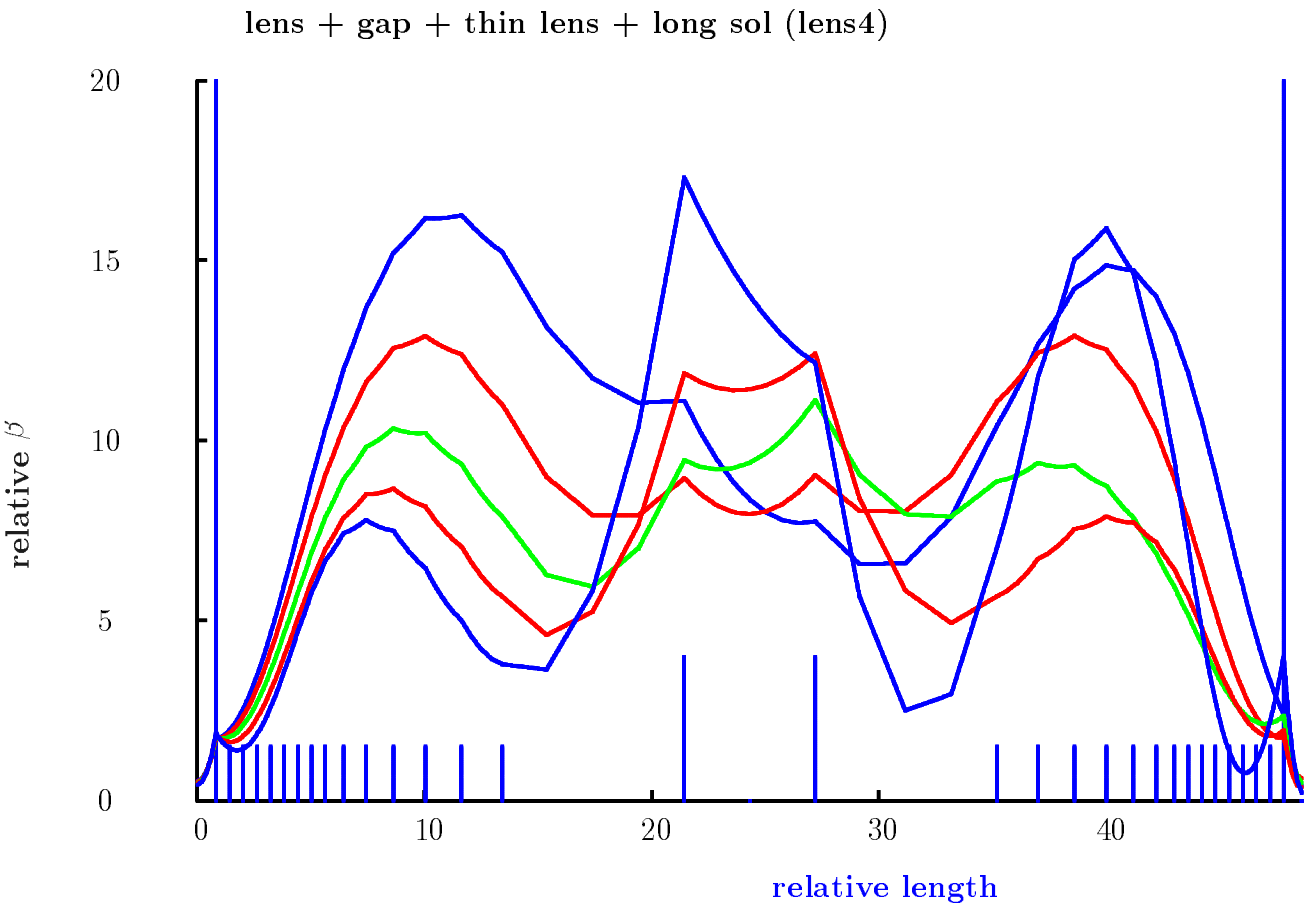

30
20
10
0
-10
-20
-30
axial and dipole B (T)
0.0
0.5
1.0
1.5
2.0
len (m)

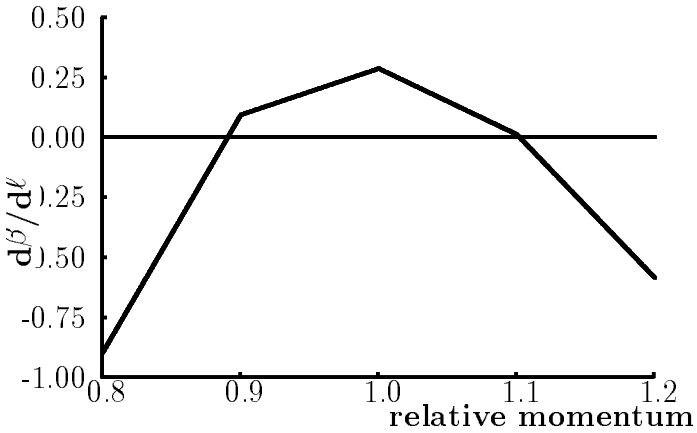

100
75
50
25
0
beta (cm)
0.0
0.5
1.0
1.5
2.0
len (m)

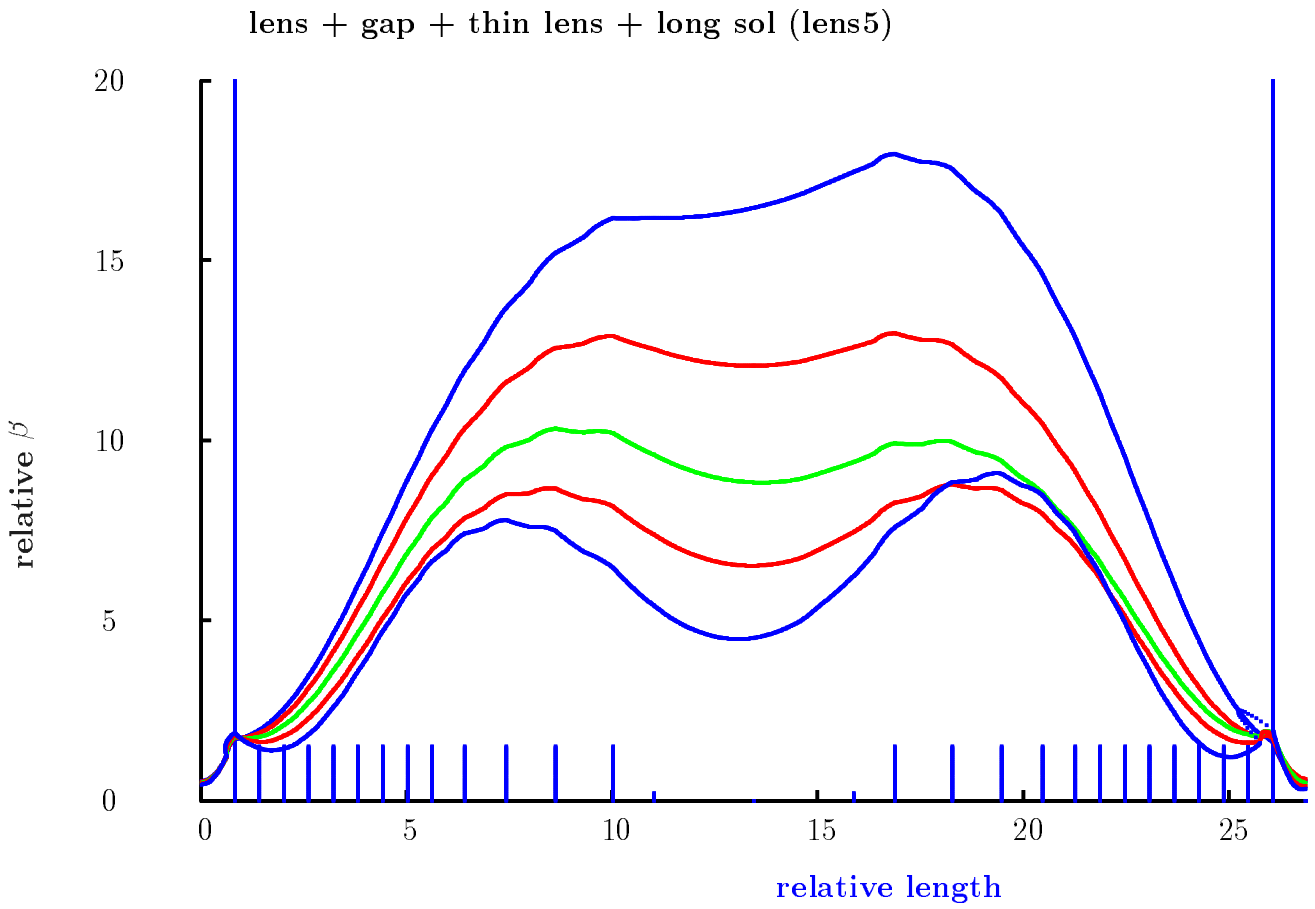

50
40
30
20
10
0
-10
dβ/dℓ
0.00
0.25
0.50
0.75
1.00
1.25
rel momentum p=p0

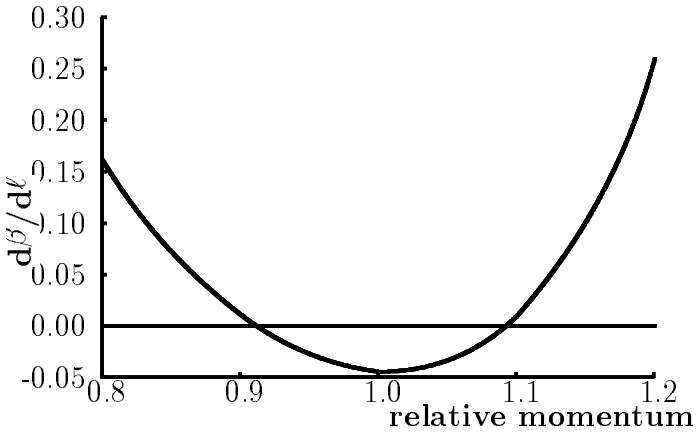

lens + gap + thin sol (lens1)
relative β
2.0
1.5
1.0
0.5
0.0
0.00
0.25
0.50
0.75
1.00
relative length


dβ/dℓ
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
relative momentum


lens + gap + thin lens + long sol (lens4)
relative β
20
15
10
5
0
0
10
20
30
40
relative length


0.50
0.25
0.00
-0.25
-0.50
-0.75
-1.00
dβ/dℓ
0.8
0.9
1.0
1.1
1.2
relative momentum


lens + gap + thin lens + long sol (lens5)
relative β
20
15
10
5
0
0
5
10
15
20
25
relative length


0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
dβ/dℓ
0.8
0.9
1.0
1.1
1.2
relative momentum