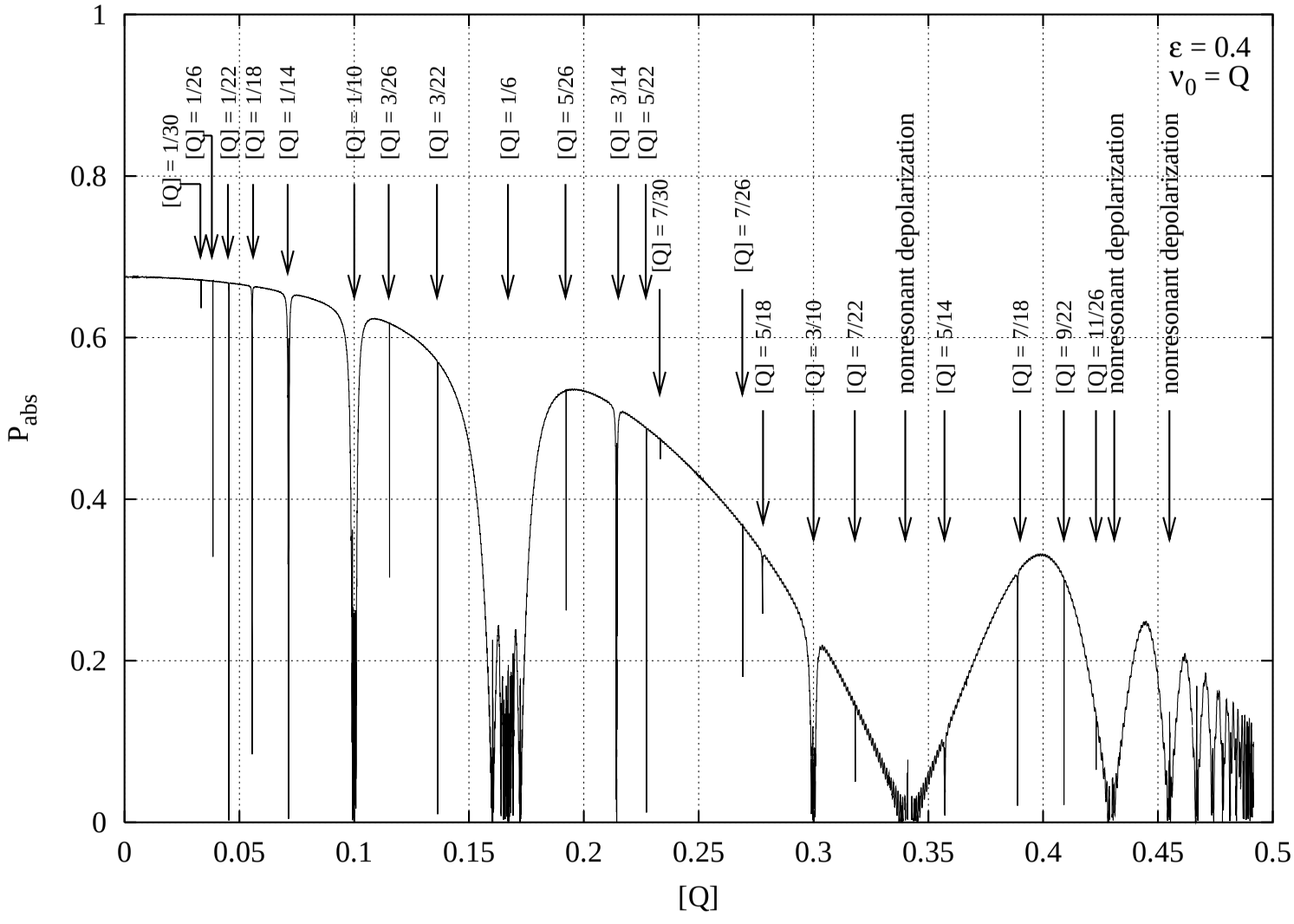
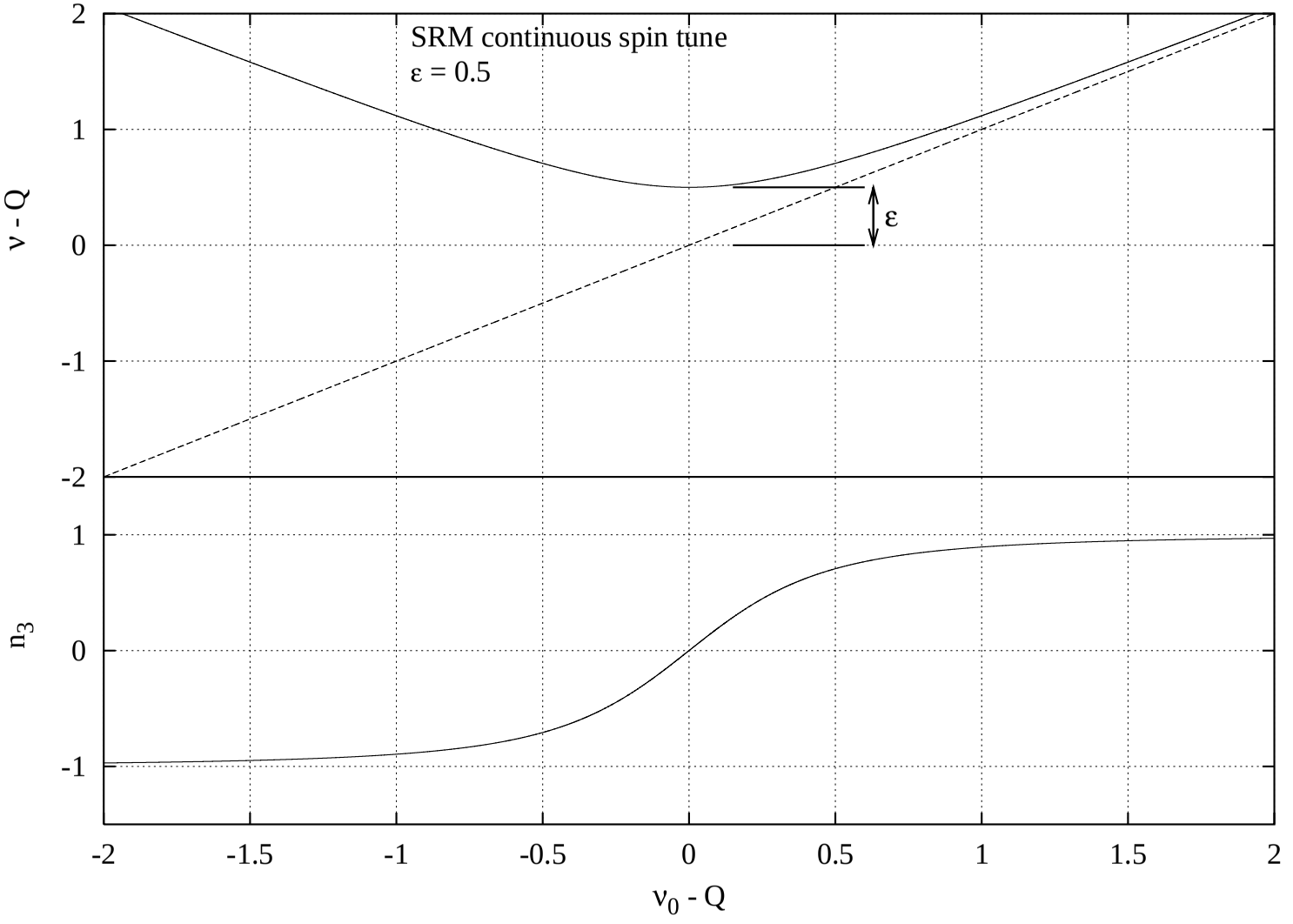
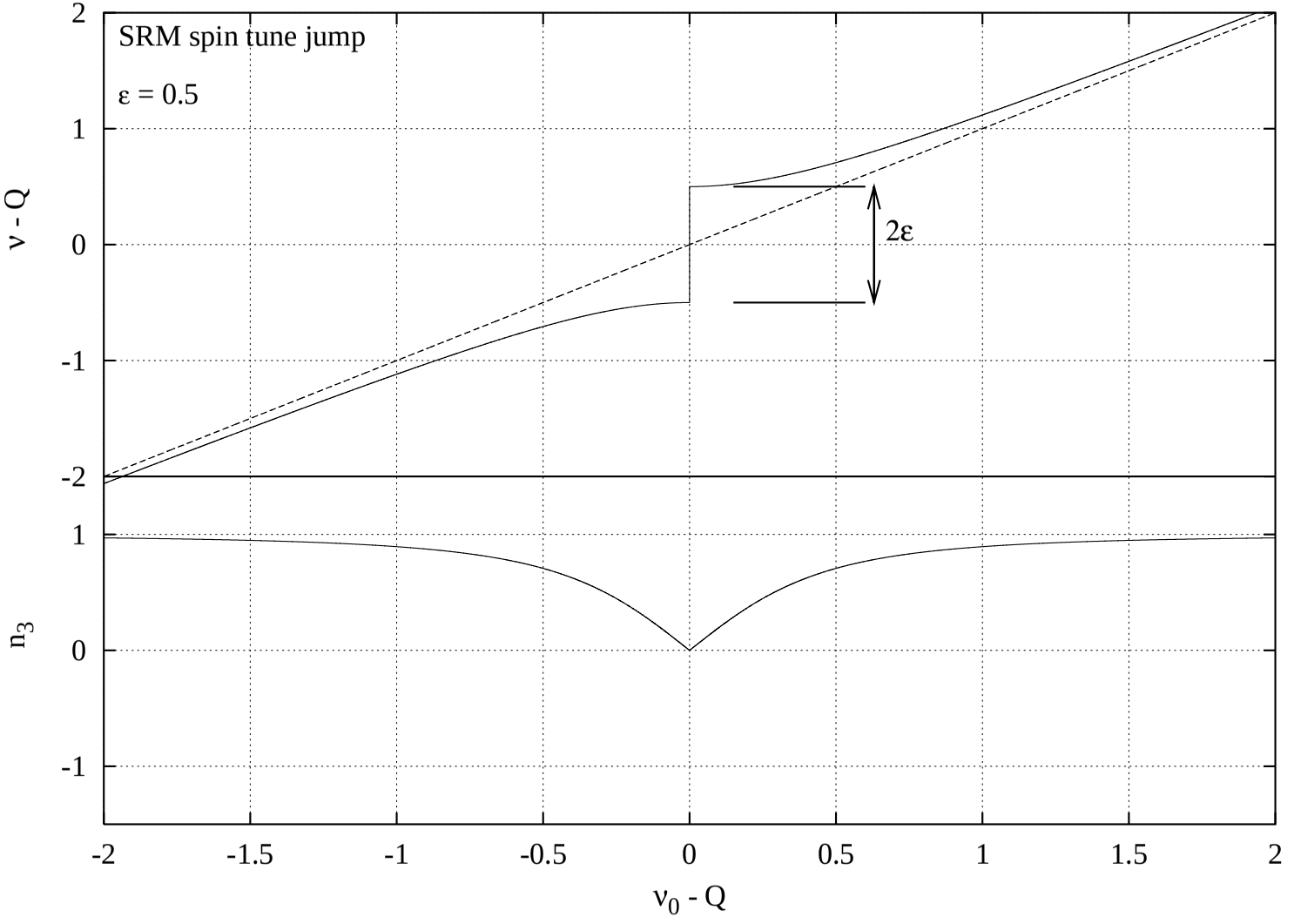
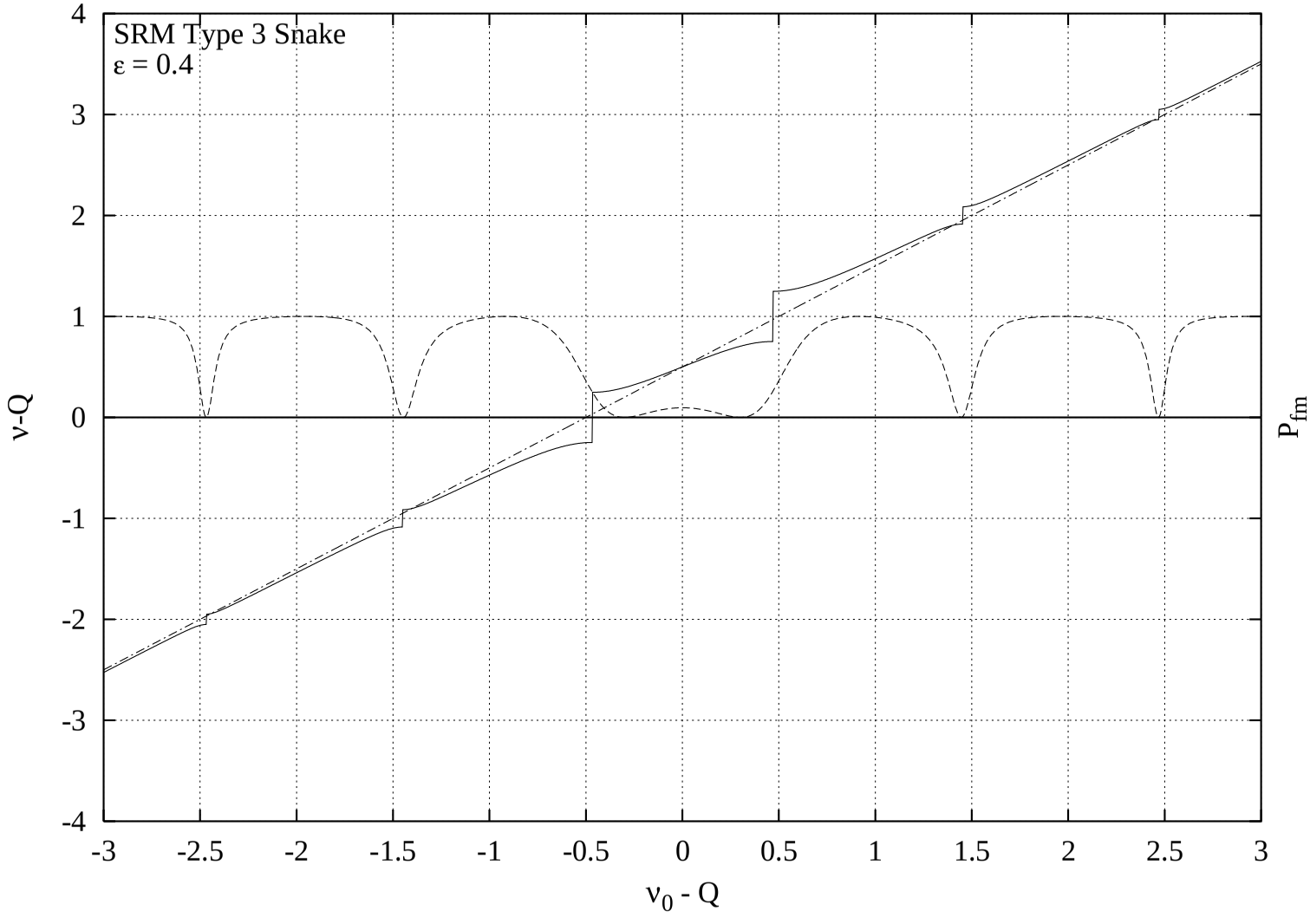
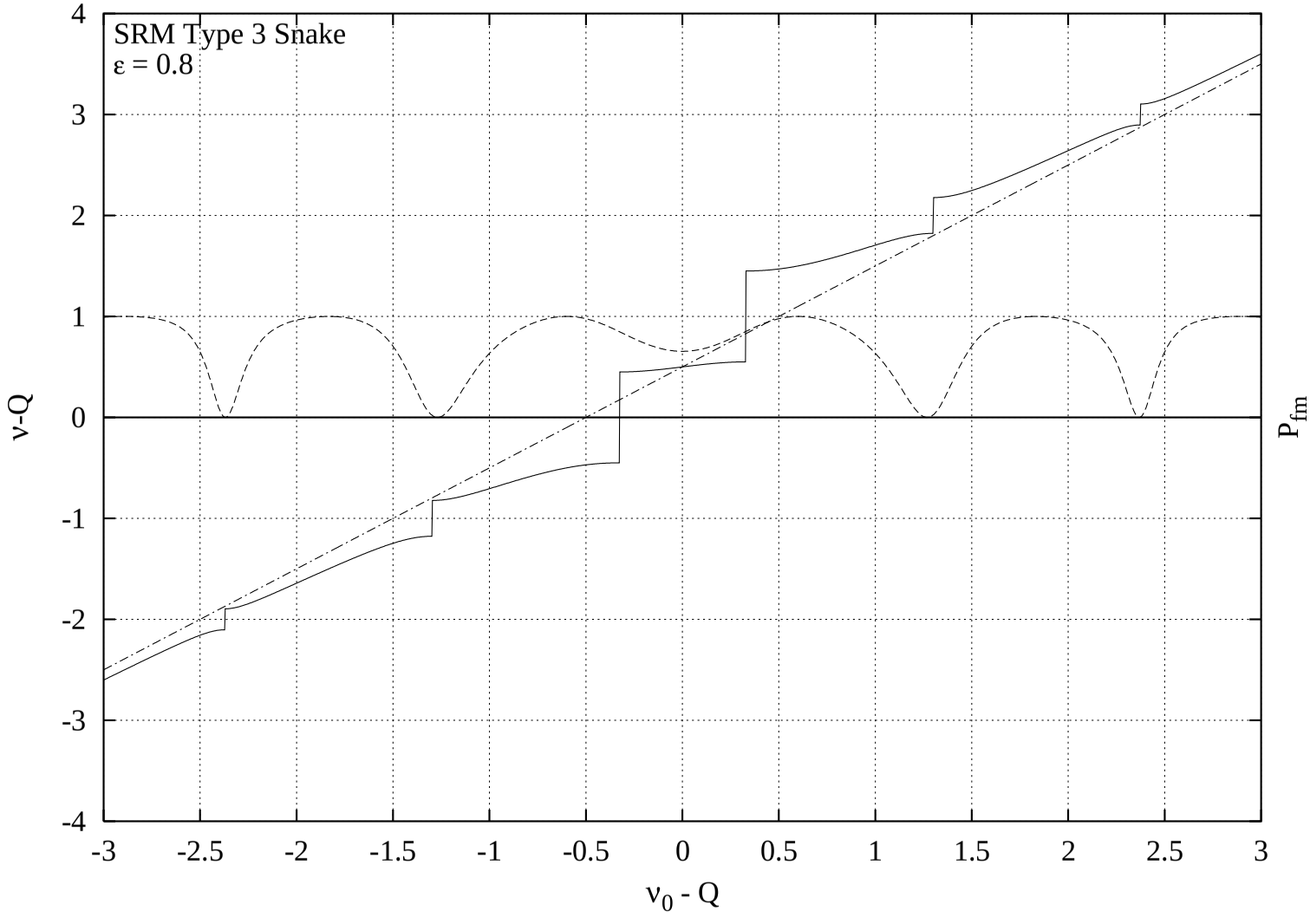
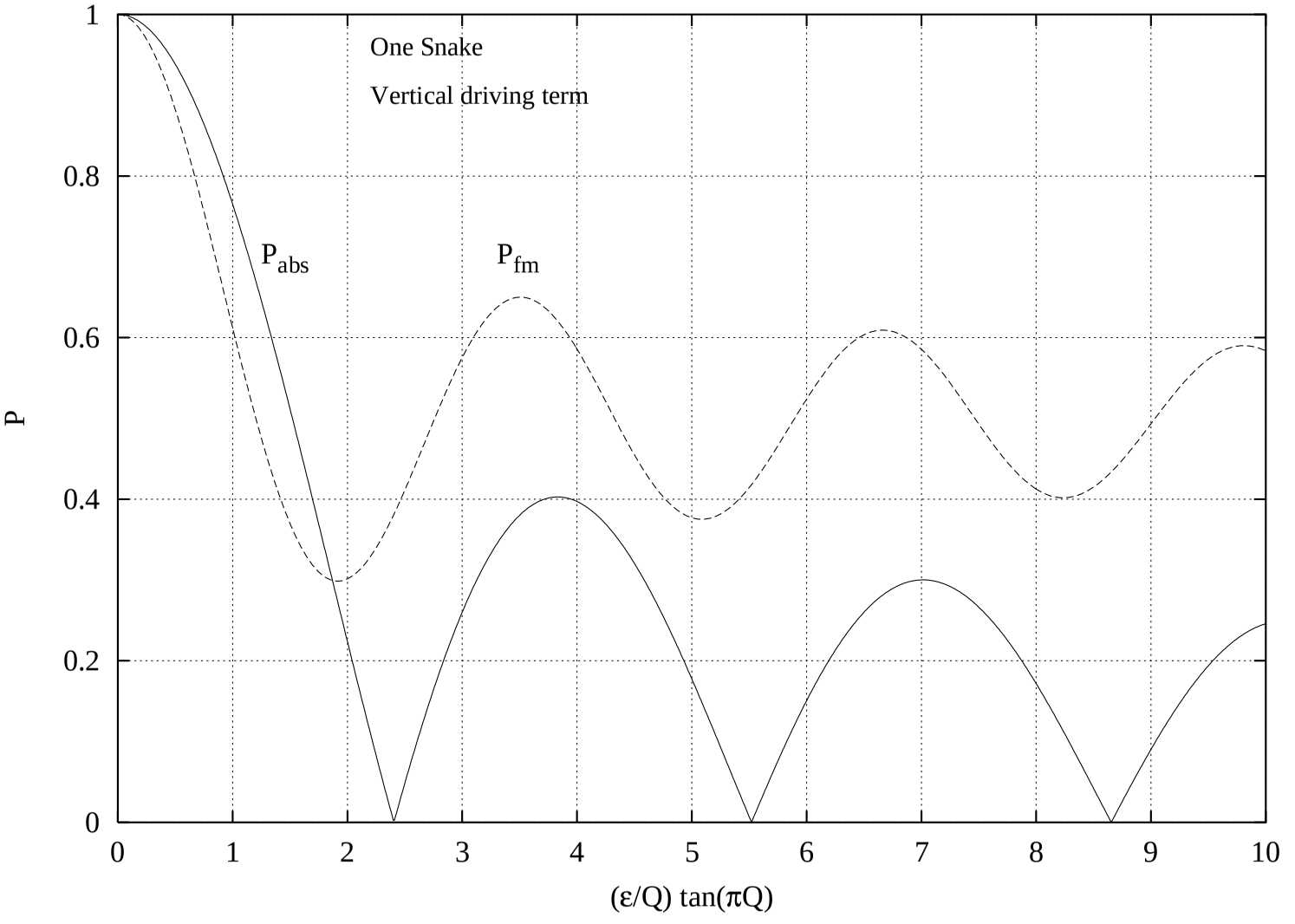

ε = 0.4
ν0 = Q
[Q] = 1/30
[Q] = 1/26
[Q] = 1/22
[Q] = 1/18
[Q] = 1/14
[Q] = 1/10
[Q] = 3/26
[Q] = 3/22
[Q] = 1/6
[Q] = 5/26
[Q] = 3/14
[Q] = 5/22
[Q] = 7/30
[Q] = 7/26
[Q] = 5/18
[Q] = 3/10
[Q] = 7/22
nonresonant depolarization
[Q] = 5/14
[Q] = 7/18
[Q] = 9/22
[Q] = 11/26
nonresonant depolarization
nonresonant depolarization
Pabs
[Q]
0
0.2
0.4
0.6
0.8
1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5

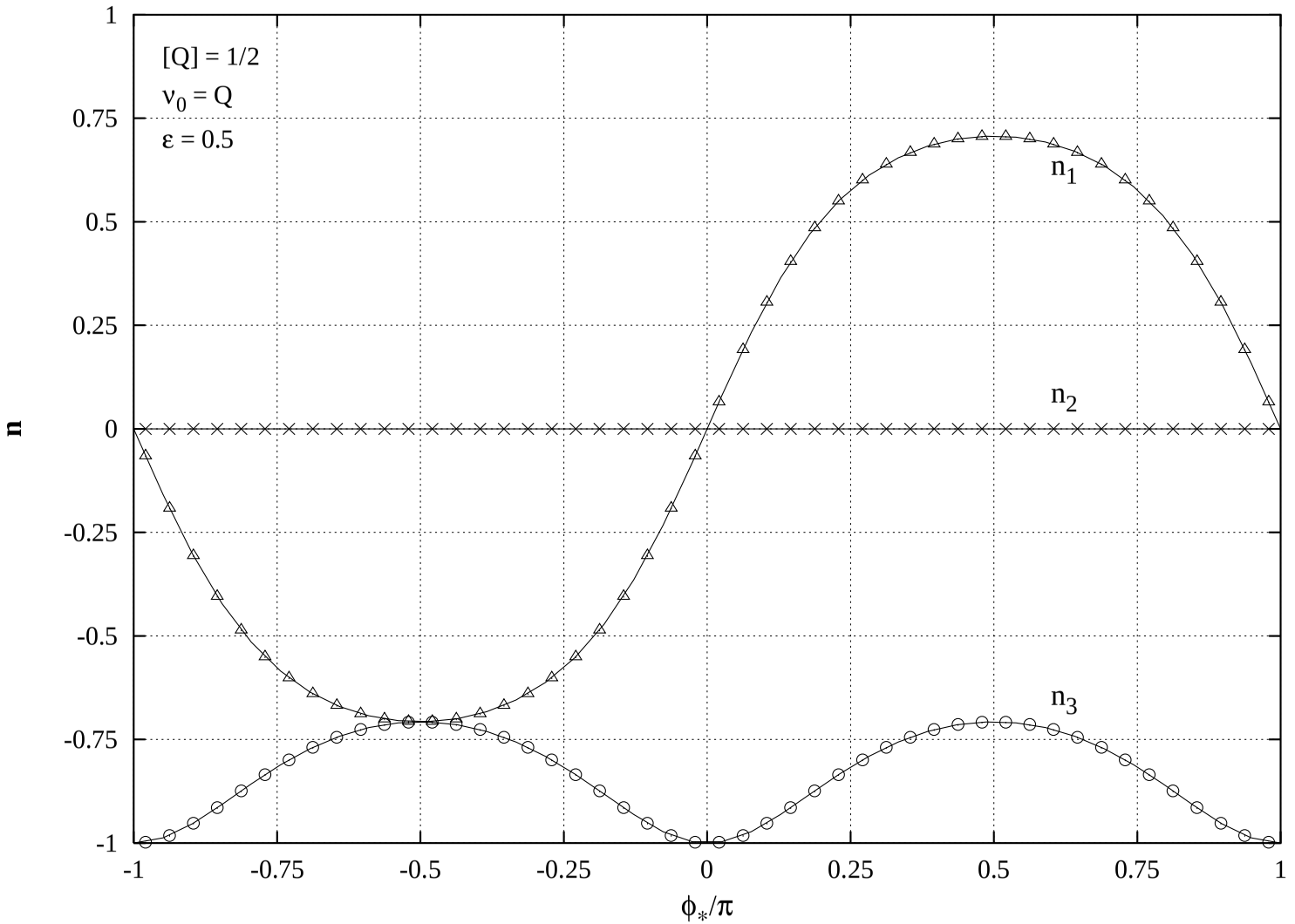

SRM continuous spin tune
ε = 0.5
ν - Q
ε
n3
ν0 - Q
2
1
0
-1
-2
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

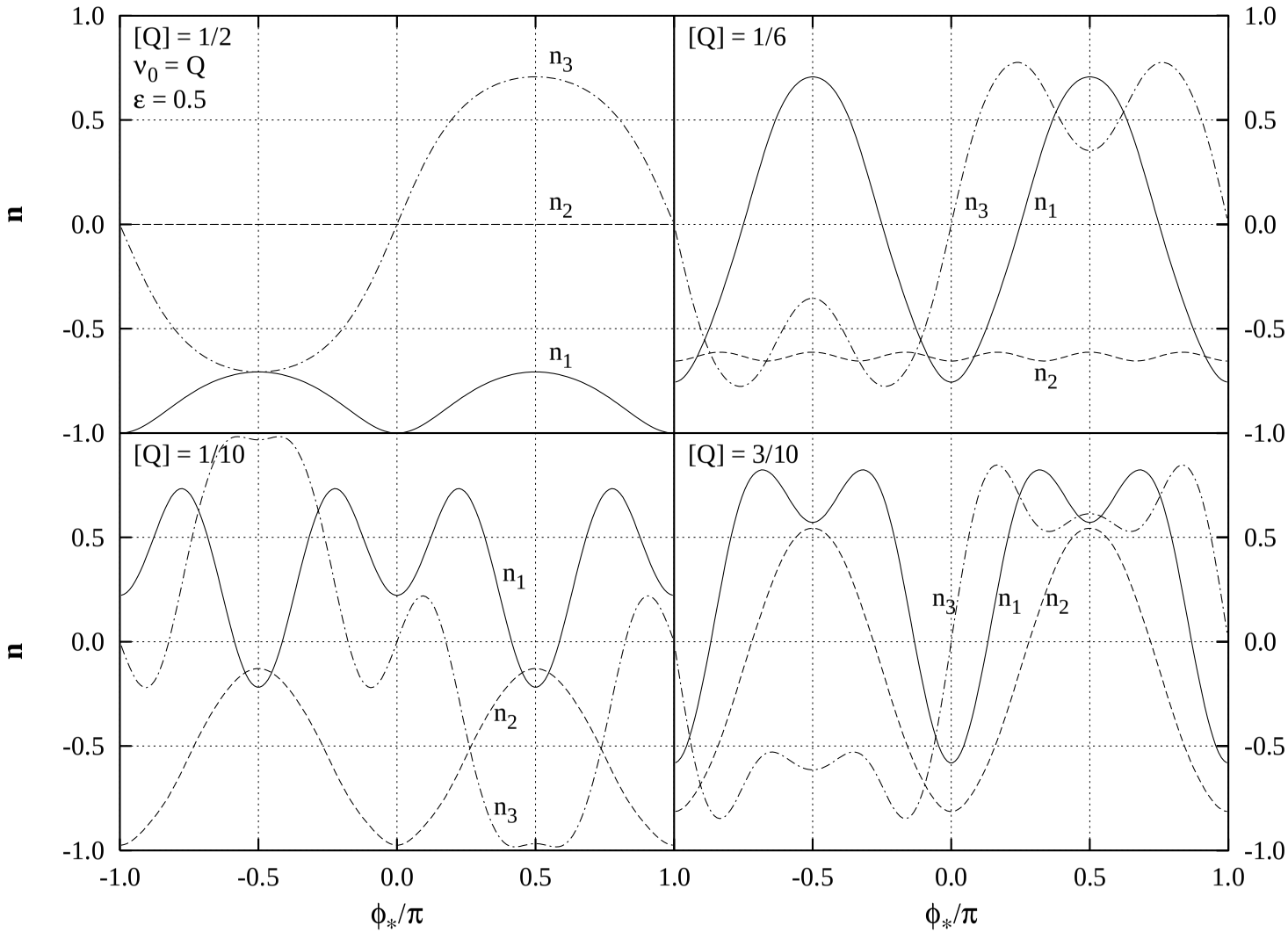

SRM spin tune jump
ε = 0.5
2ε
ν - Q
n_3
ν_0 - Q
2
1
0
-1
-2
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2


SRM Type 3 Snake
ε = 0.4
ν-Q
ν_0 - Q
P_{fm}
4
3
2
1
0
-1
-2
-3
-4
-3
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3

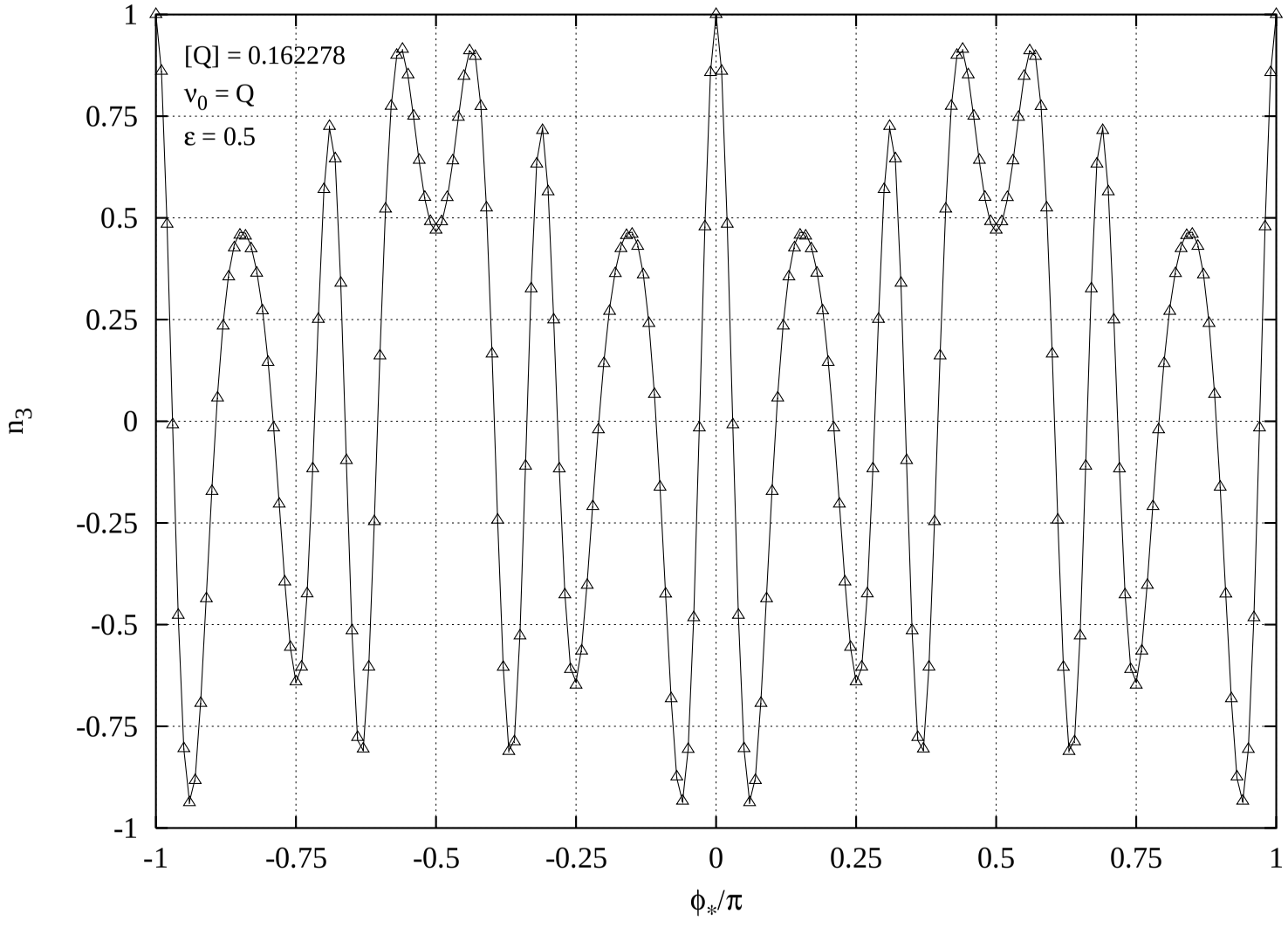

SRM Type 3 Snake
ε = 0.8
ν-Q
P_{fm}
ν_0 - Q
4
3
2
1
0
-1
-2
-3
-4
-3
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3

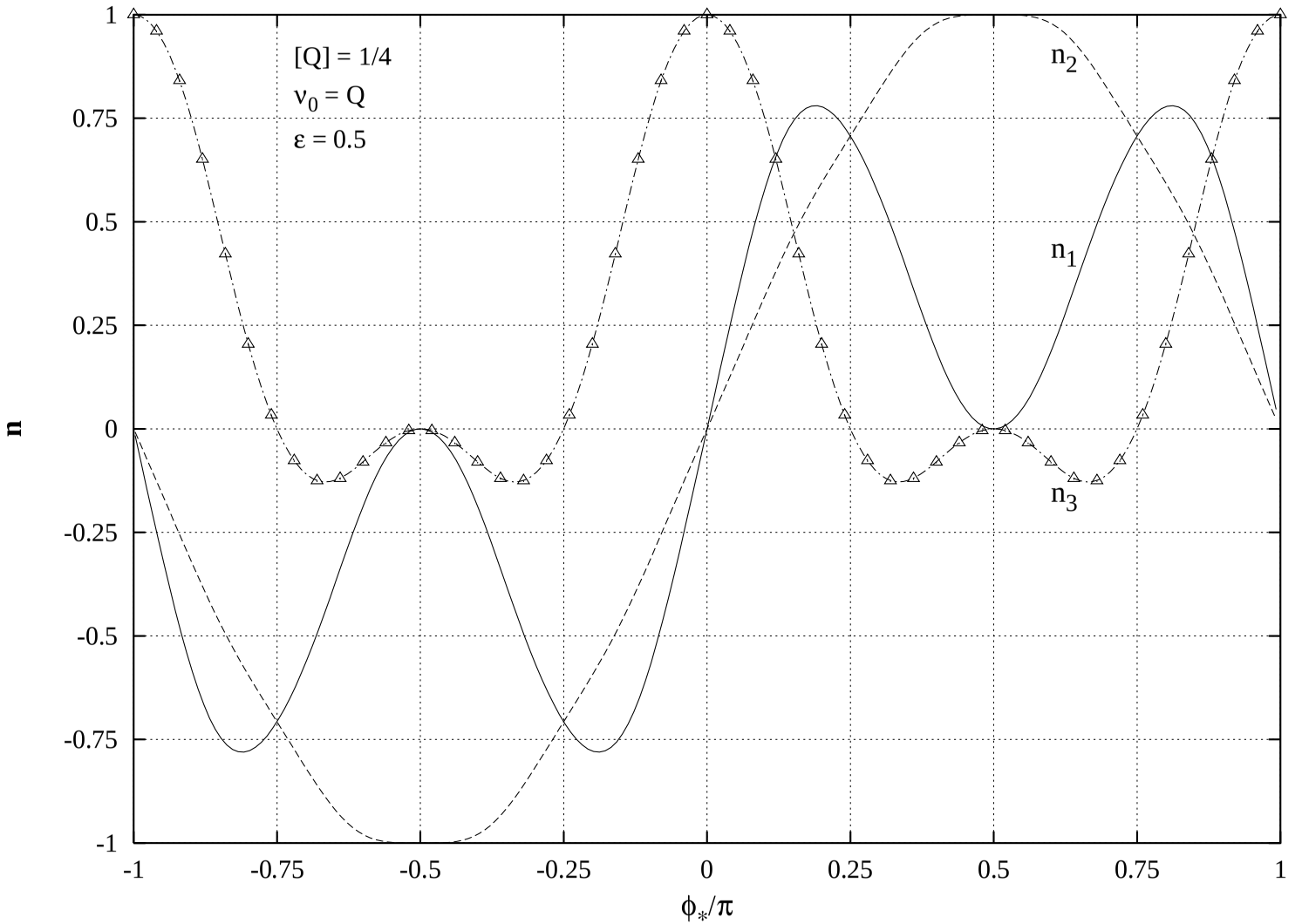

One Snake
Vertical driving term
P_{abs}
P_{fm}
P
(ε/Q) tan(πQ)
0
0.2
0.4
0.6
0.8
1
0
1
2
3
4
5
6
7
8
9
10

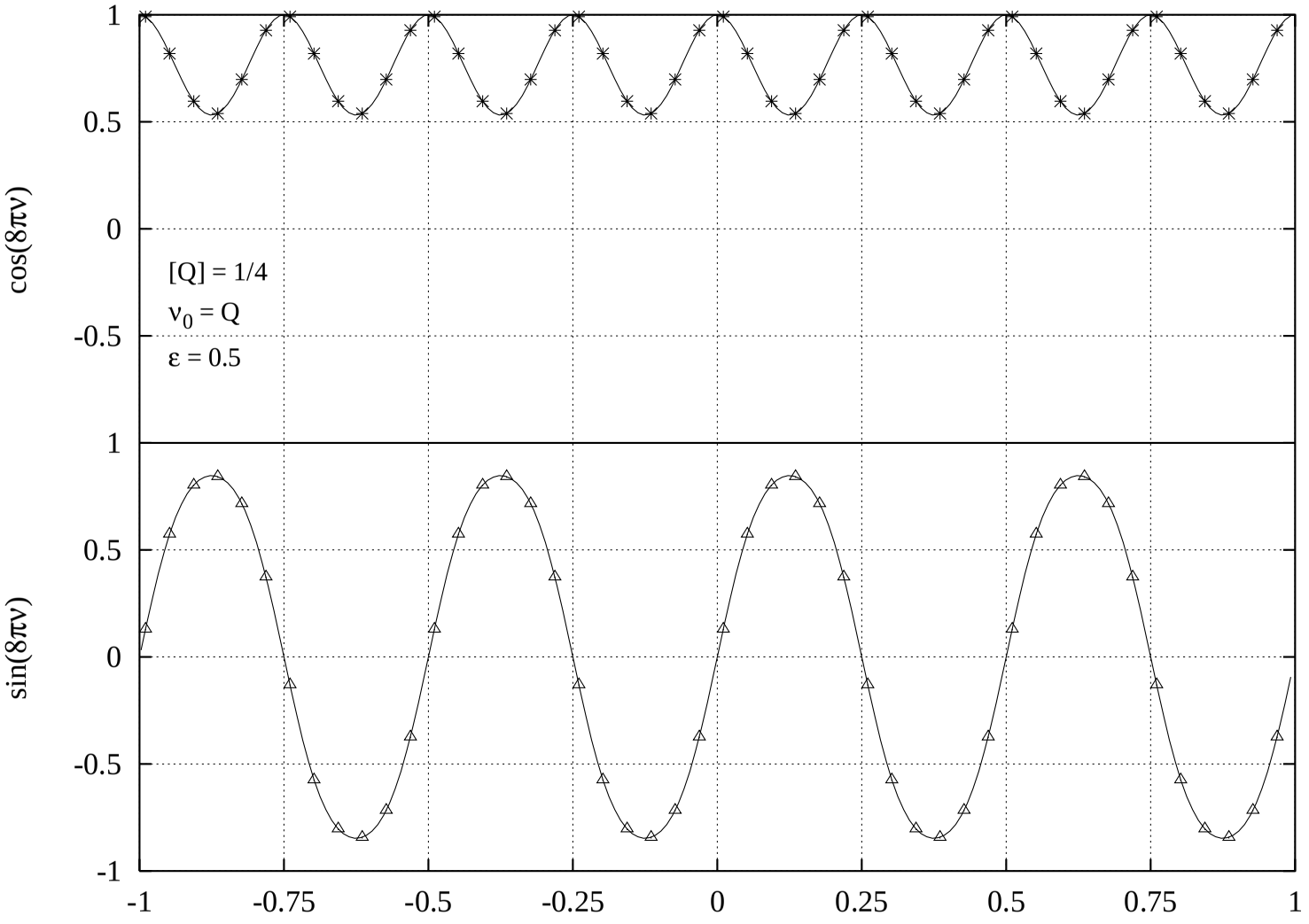

[Q] = 1/2
ν0 = Q
ε = 0.5
n1
n2
n3
n
ϕ*/π
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.75
-0.5
-0.25
0
0.25
0.5
0.75
1

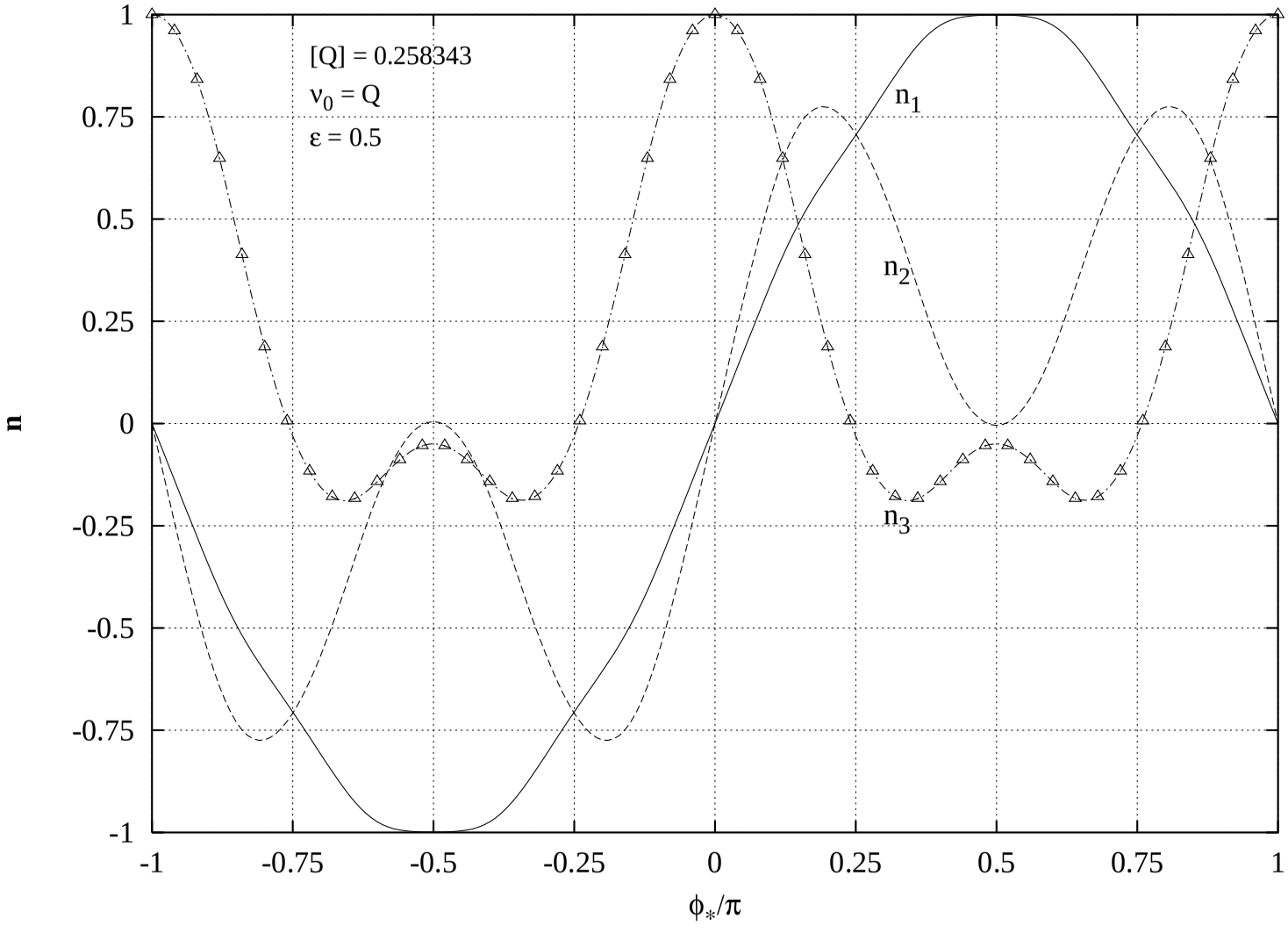

[Q] = 1/2
ν0 = Q
ε = 0.5
[Q] = 1/6
[Q] = 1/10
[Q] = 3/10
n1
n2
n3
n
ϕ*/π
1.0
0.5
0.0
-0.5
-1.0

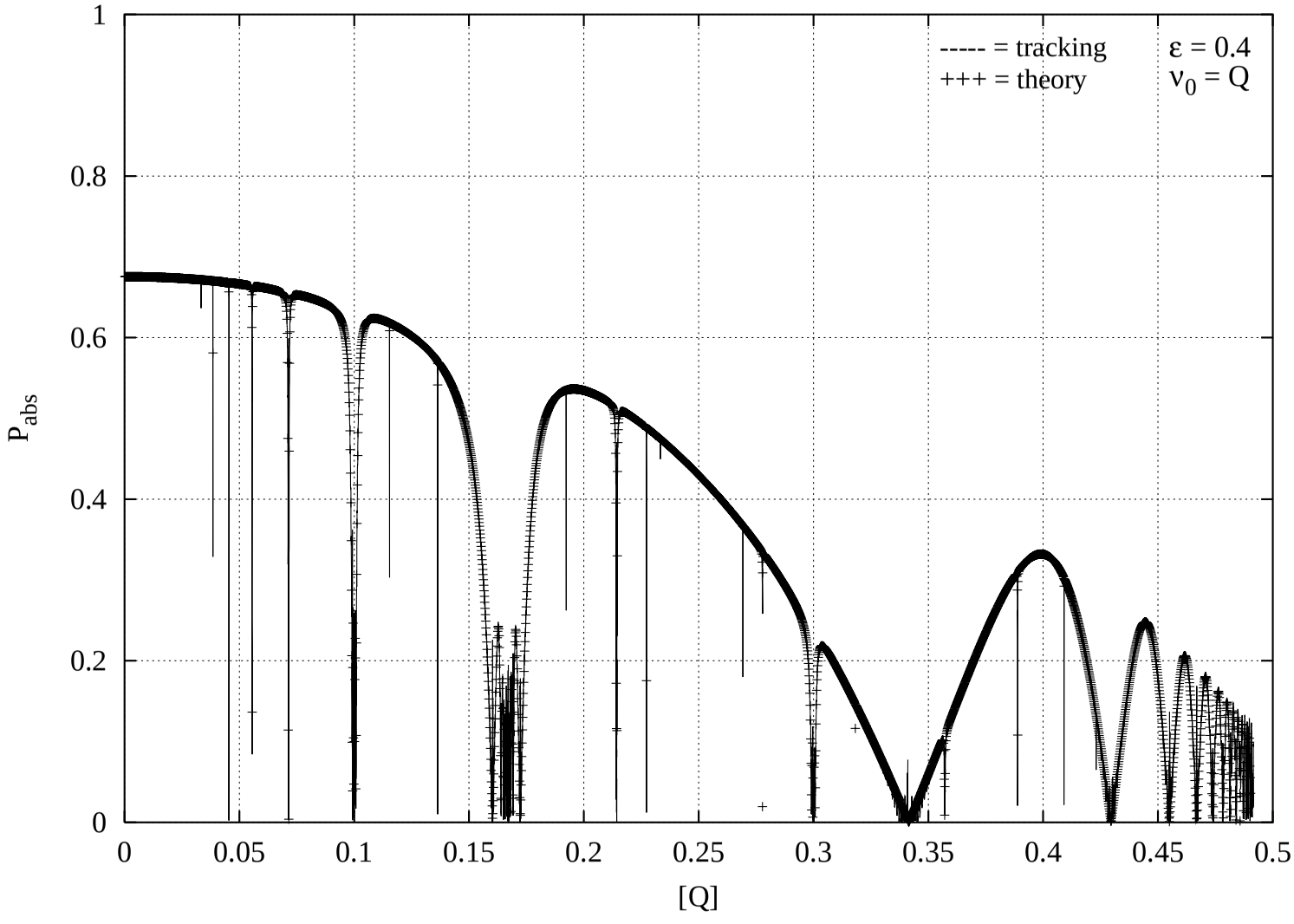
cos(4πν)
cos(12πν)
cos(20πν)
sin(4πν)
sin(12πν)
sin(20πν)
[Q] = 1/2
ν0 = Q
ε = 0.5
[Q] = 1/6
[Q] = 1/10, 3/10
[Q] = 1/2
[Q] = 1/6
[Q] = 1/10, 3/10
φ*/π
φ*/π
1.0
0.0
-1.0
-0.5
0.5

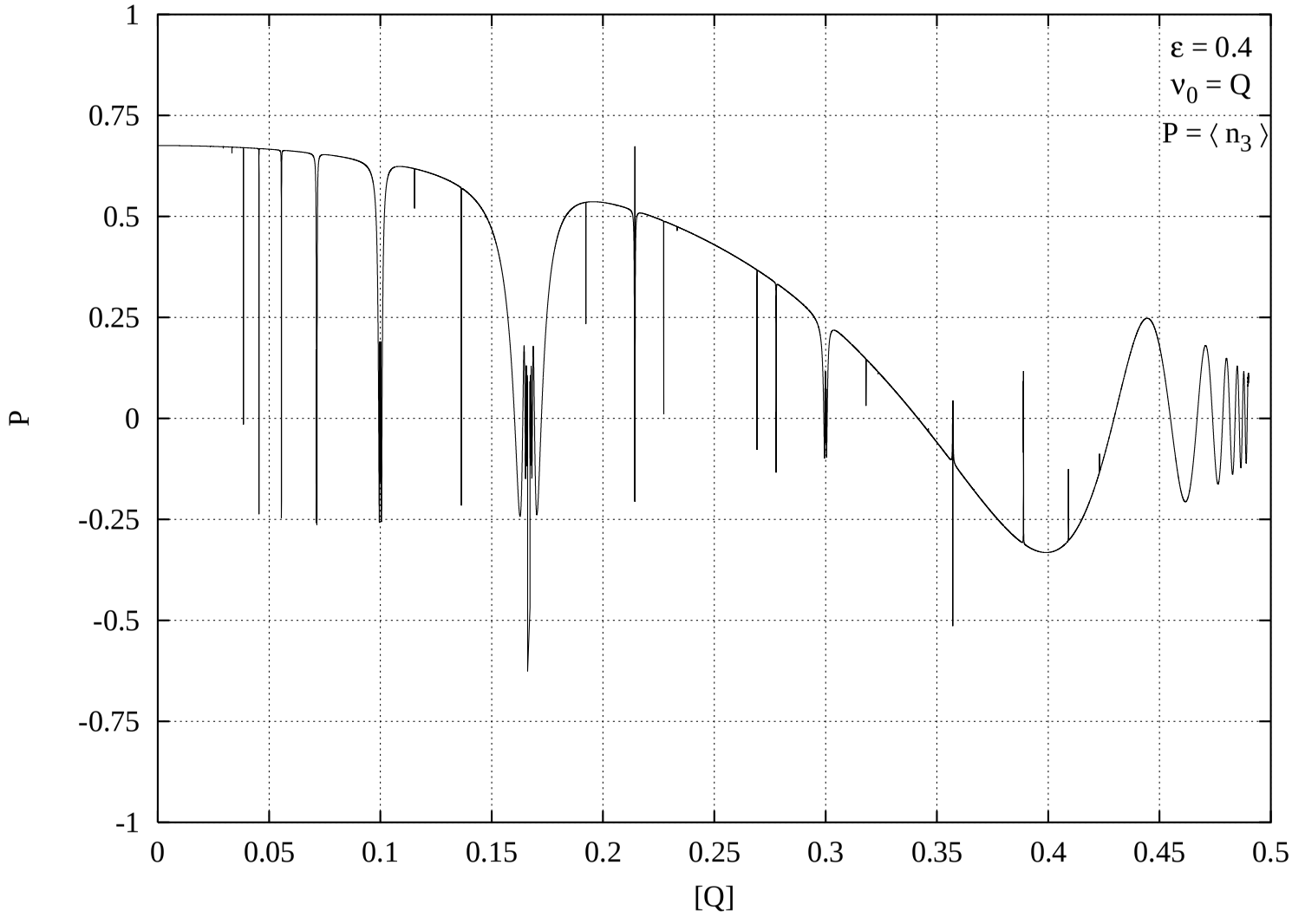

[Q] = 0.162278
ν_0 = Q
ε = 0.5
n_3
ϕ_*/π
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.75
-0.5
-0.25
0
0.25
0.5
0.75
1

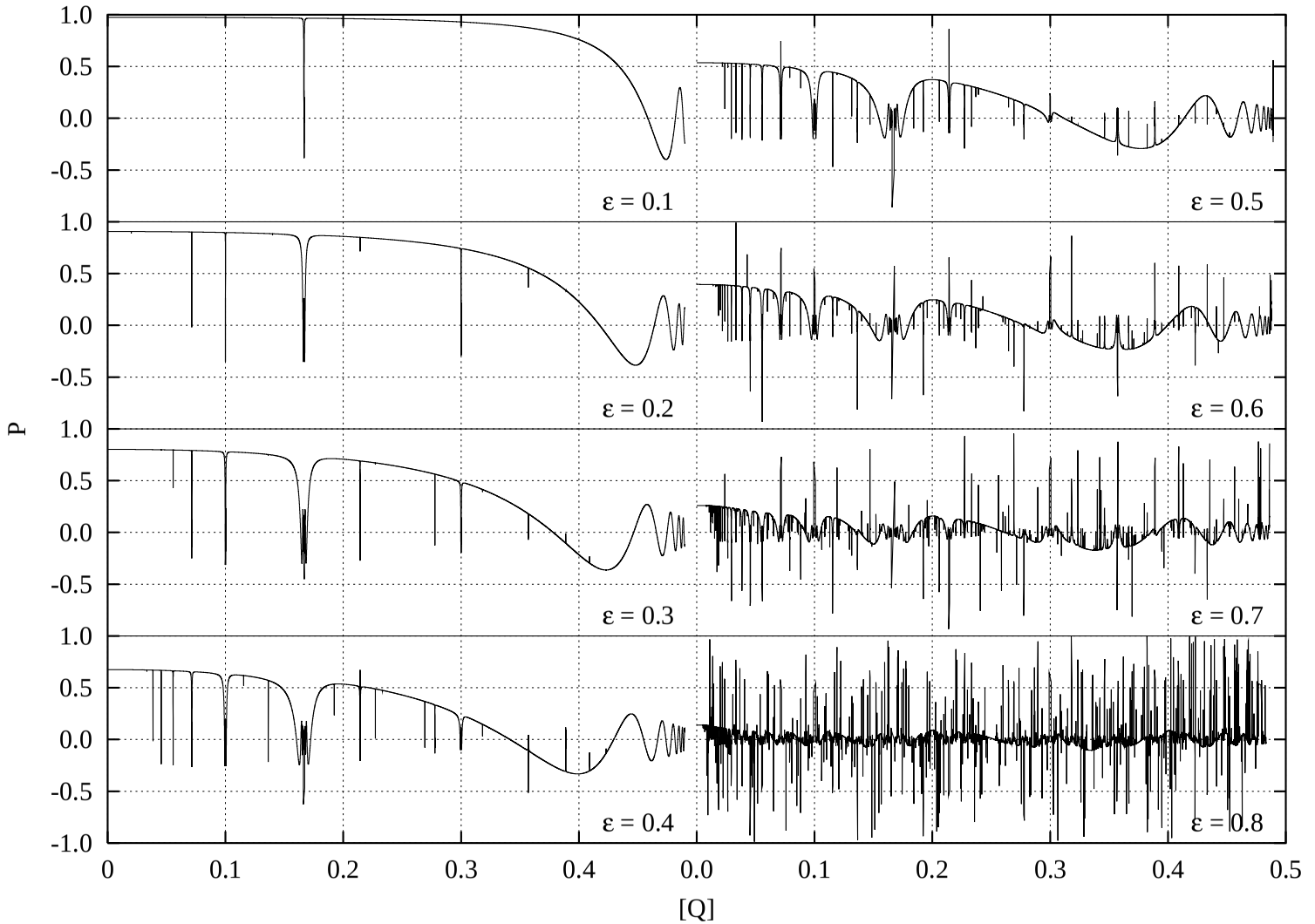

[Q] = 1/4
ν_0 = Q
ε = 0.5
n_1
n_2
n_3
n
ϕ_*/π
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.75
-0.5
-0.25
0
0.25
0.5
0.75
1

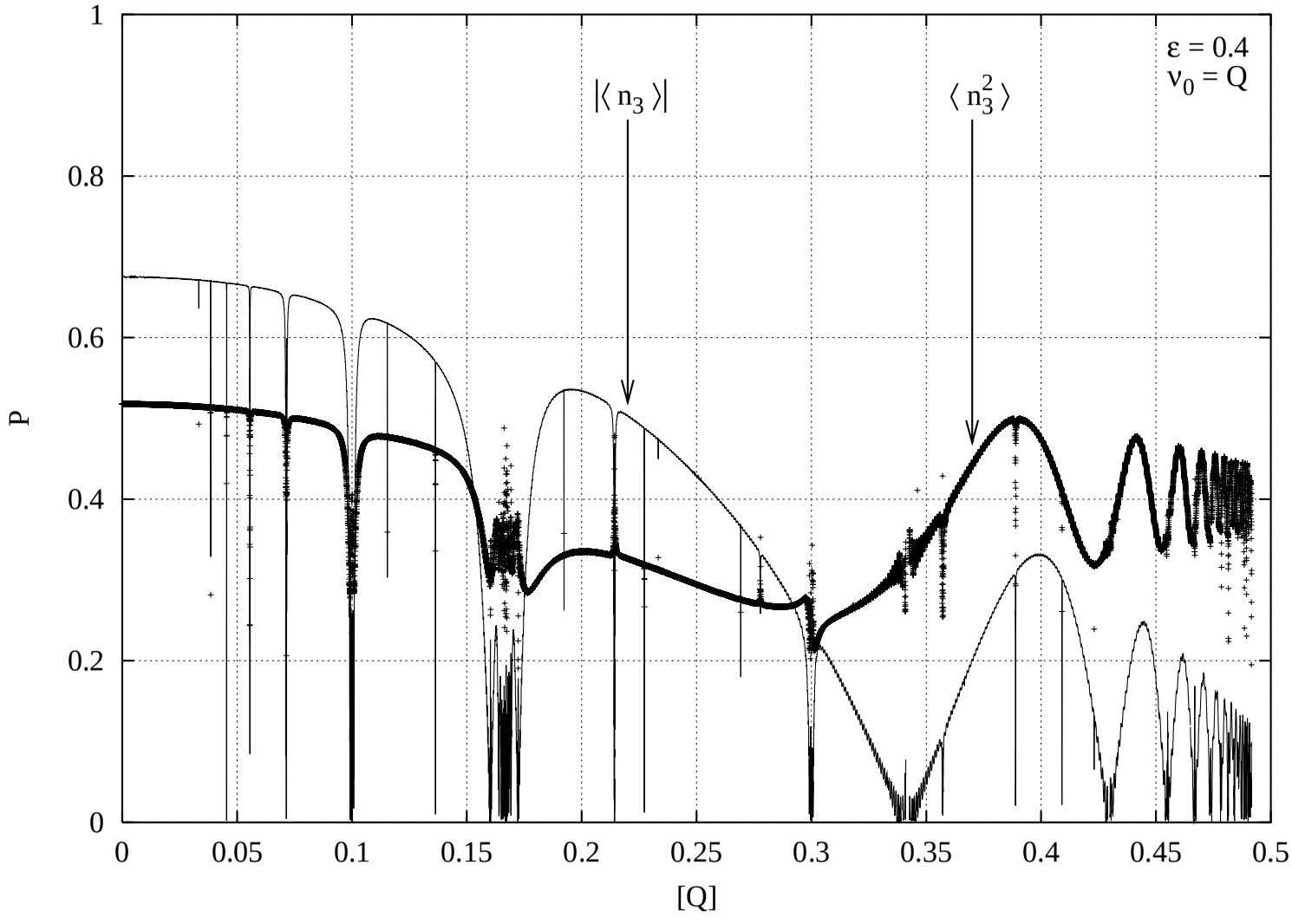

cos(8πν)
sin(8πν)
[Q] = 1/4
ν0 = Q
ε = 0.5
1
0.5
0
-0.5
1
0.5
0
-0.5
-1
-1
-0.75
-0.5
-0.25
0
0.25
0.5
0.75
1

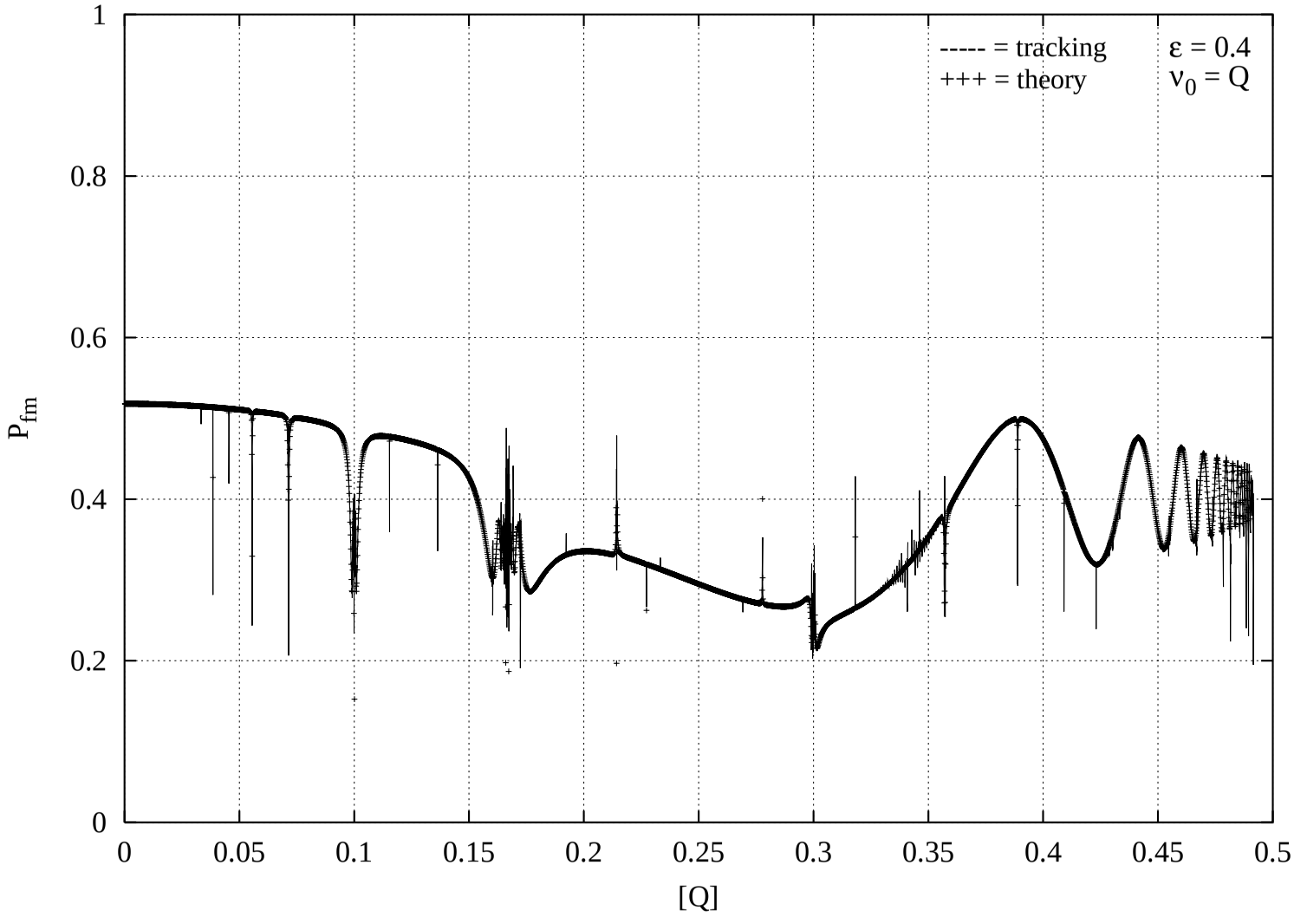

[Q] = 0.258343
ν_0 = Q
ε = 0.5
n_1
n_2
n_3
n
ϕ_*/π
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.75
-0.5
-0.25
0
0.25
0.5
0.75
1


----- = tracking
+++ = theory
ε = 0.4
ν0 = Q
Pabs
[Q]
0
0.2
0.4
0.6
0.8
1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5


ε = 0.4
ν0 = Q
P = ⟨ n3 ⟩
P
[Q]
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5


P
[Q]
ε = 0.1
ε = 0.2
ε = 0.3
ε = 0.4
ε = 0.5
ε = 0.6
ε = 0.7
ε = 0.8
1.0
0.5
0.0
-0.5
-1.0
0
0.1
0.2
0.3
0.4
0.0
0.1
0.2
0.3
0.4
0.5


ε = 0.4
ν0 = Q
|⟨ n3 ⟩|
⟨ n3^2 ⟩
P
[Q]
0
0.2
0.4
0.6
0.8
1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5


----- = tracking
+++ = theory
ε = 0.4
ν0 = Q
Pfm
[Q]
0
0.2
0.4
0.6
0.8
1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5