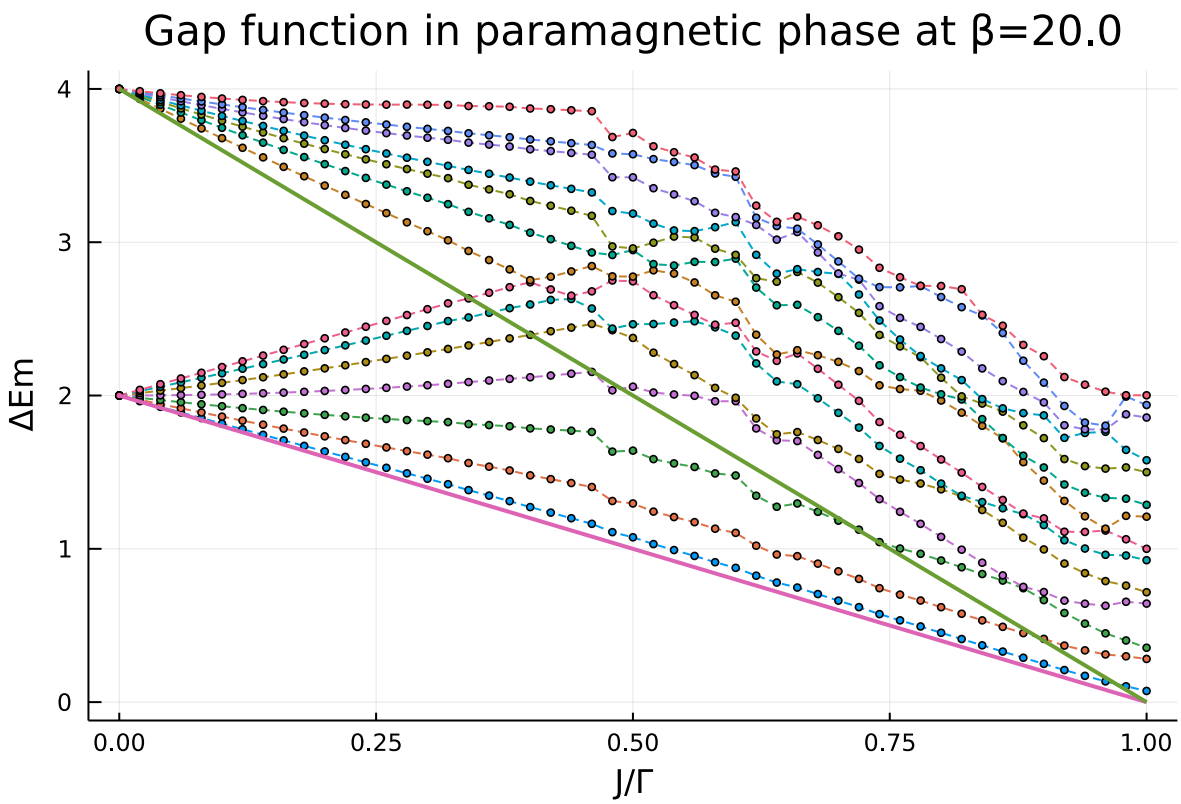
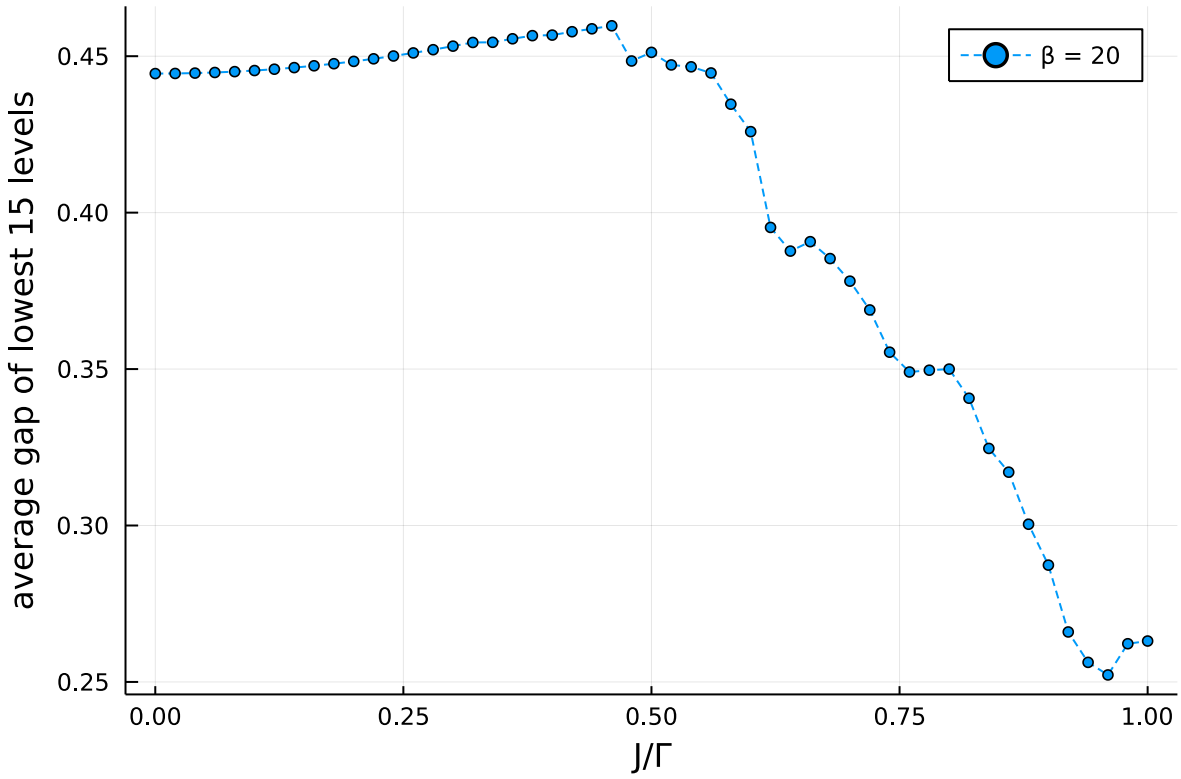
```
num = 15
```

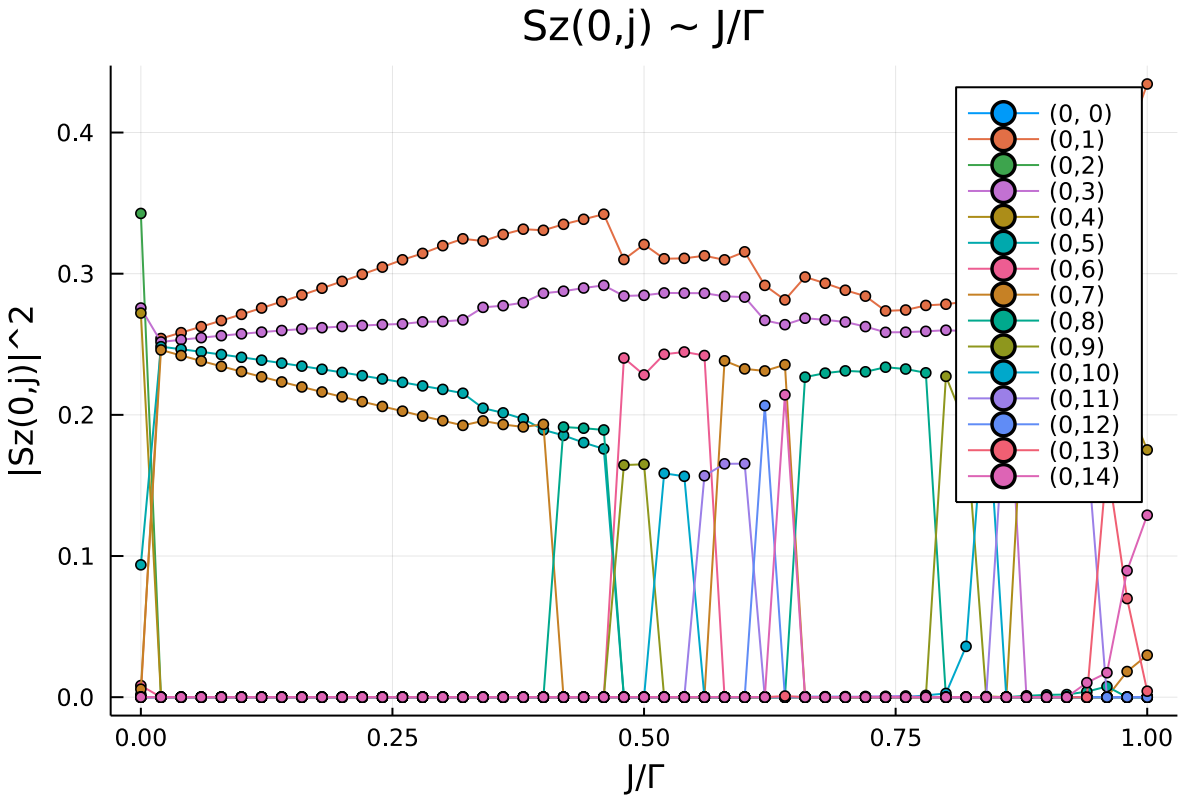
```
β = 20
```

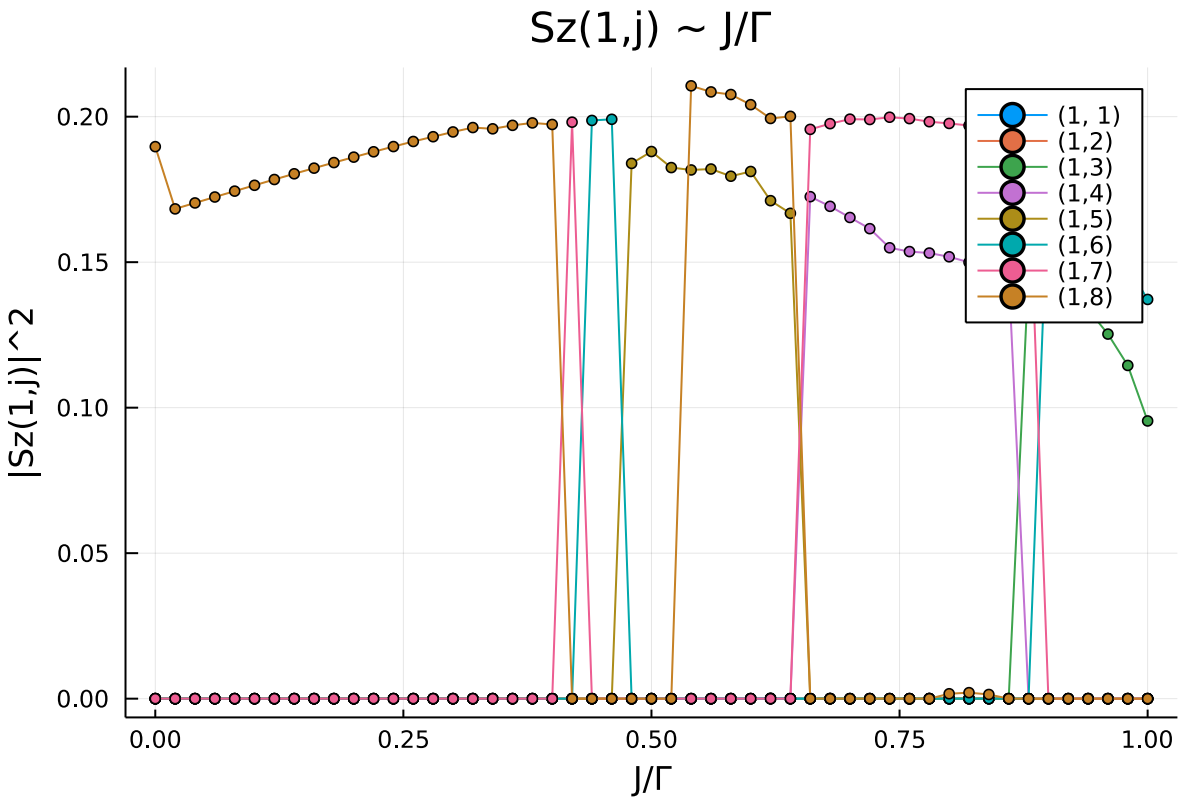
```
"J = [i for i in range(0.,1.,step = 0.02)]"
```

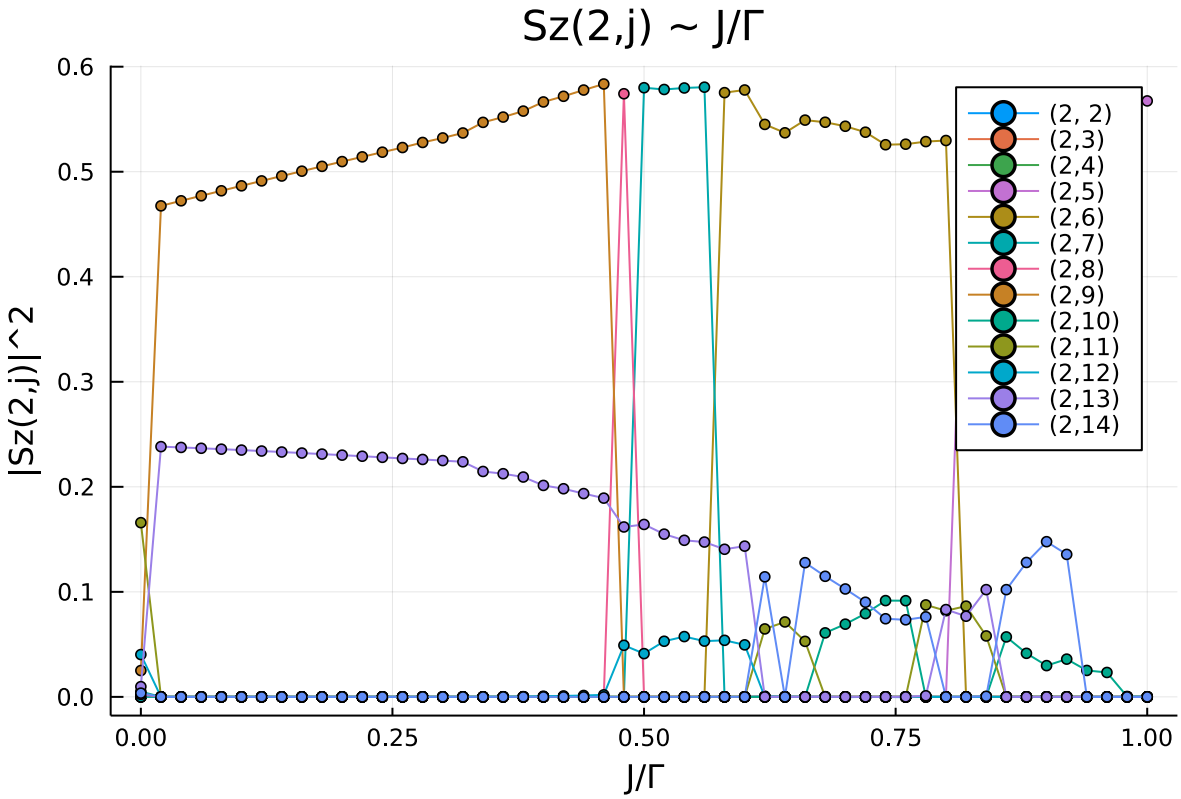
```
"data path =../data/b_20_jchange.jld"
```

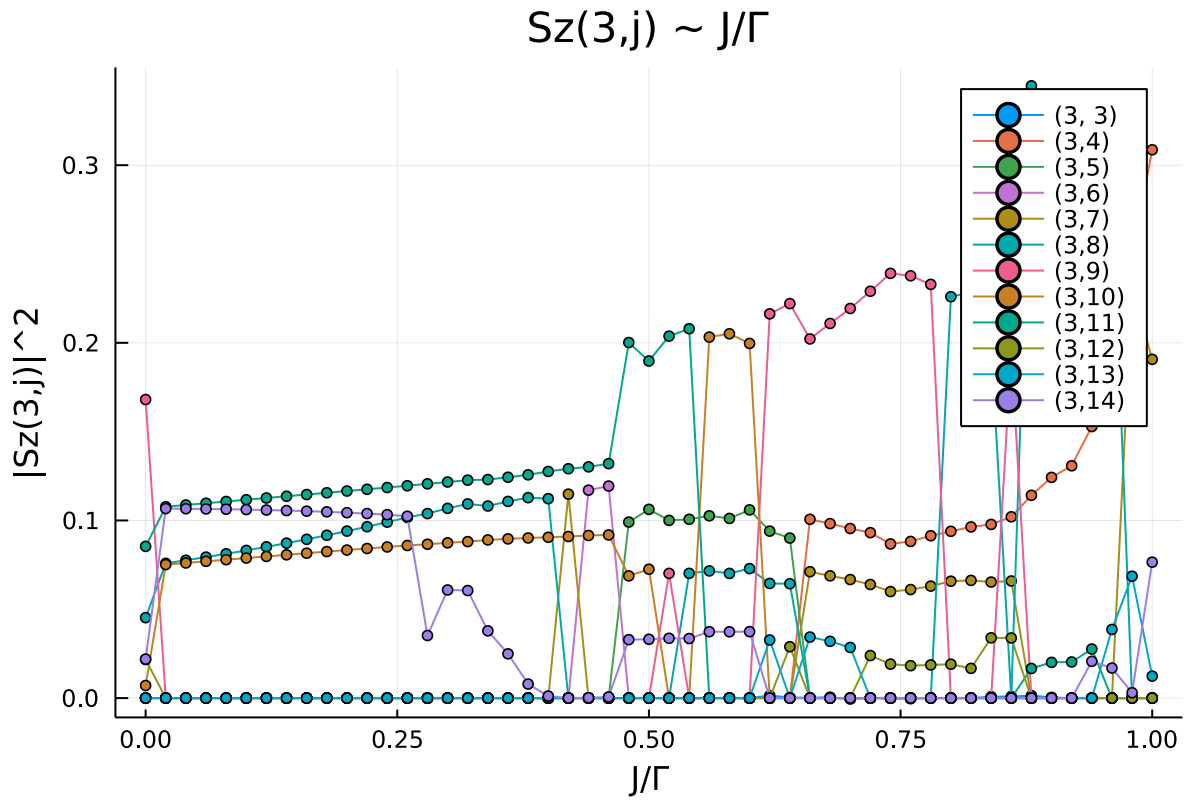


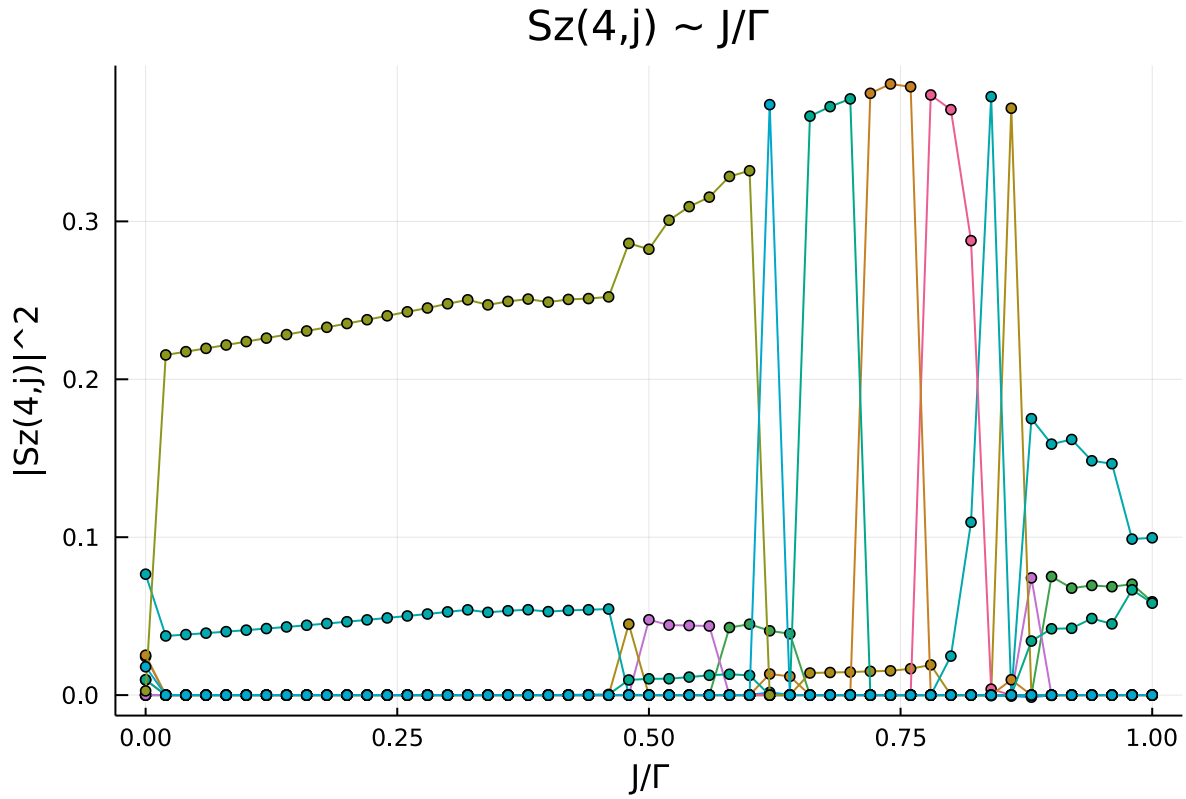

β = 20
average gap of lowest 15 levels
0.45
0.40
0.35
0.30
0.25
0.00
0.25
0.50
0.75
1.00
J/Γ


Sz(0,j) ~ J/Γ
|Sz(0,j)|^2
0.4
0.3
0.2
0.1
0.0
0.00
0.25
0.50
0.75
1.00
J/Γ
(0, 0)
(0,1)
(0,2)
(0,3)
(0,4)
(0,5)
(0,6)
(0,7)
(0,8)
(0,9)
(0,10)
(0,11)
(0,12)
(0,13)
(0,14)


Sz(1,j) ~ J/Γ
|Sz(1,j)|^2
J/Γ
0.00
0.05
0.10
0.15
0.20
0.00
0.25
0.50
0.75
1.00
(1, 1)
(1,2)
(1,3)
(1,4)
(1,5)
(1,6)
(1,7)
(1,8)


Sz(2,j) ~ J/Γ
|Sz(2,j)|^2
J/Γ
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.00
0.25
0.50
0.75
1.00
(2, 2)
(2,3)
(2,4)
(2,5)
(2,6)
(2,7)
(2,8)
(2,9)
(2,10)
(2,11)
(2,12)
(2,13)
(2,14)






```
plot_sz (generic function with 1 method)
```

```
"operator z"
```

```
"load packages"
```