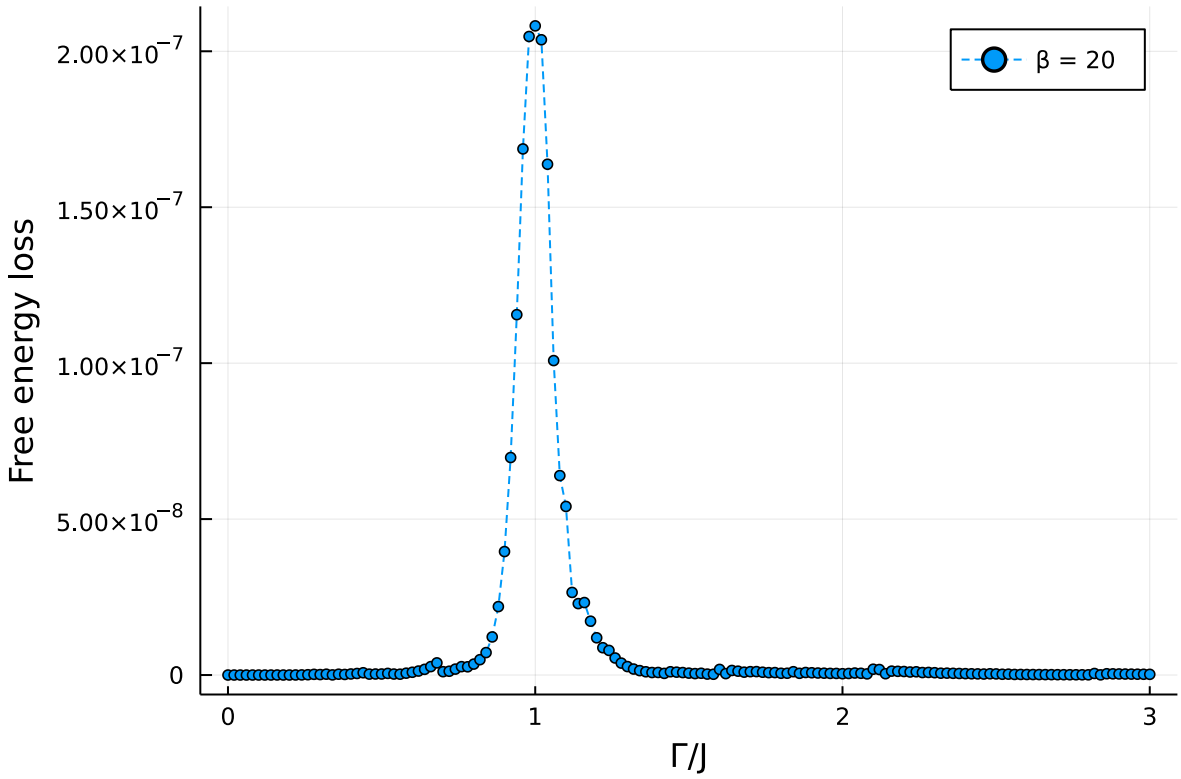
Thermal dynamic quantites

Free energy loss

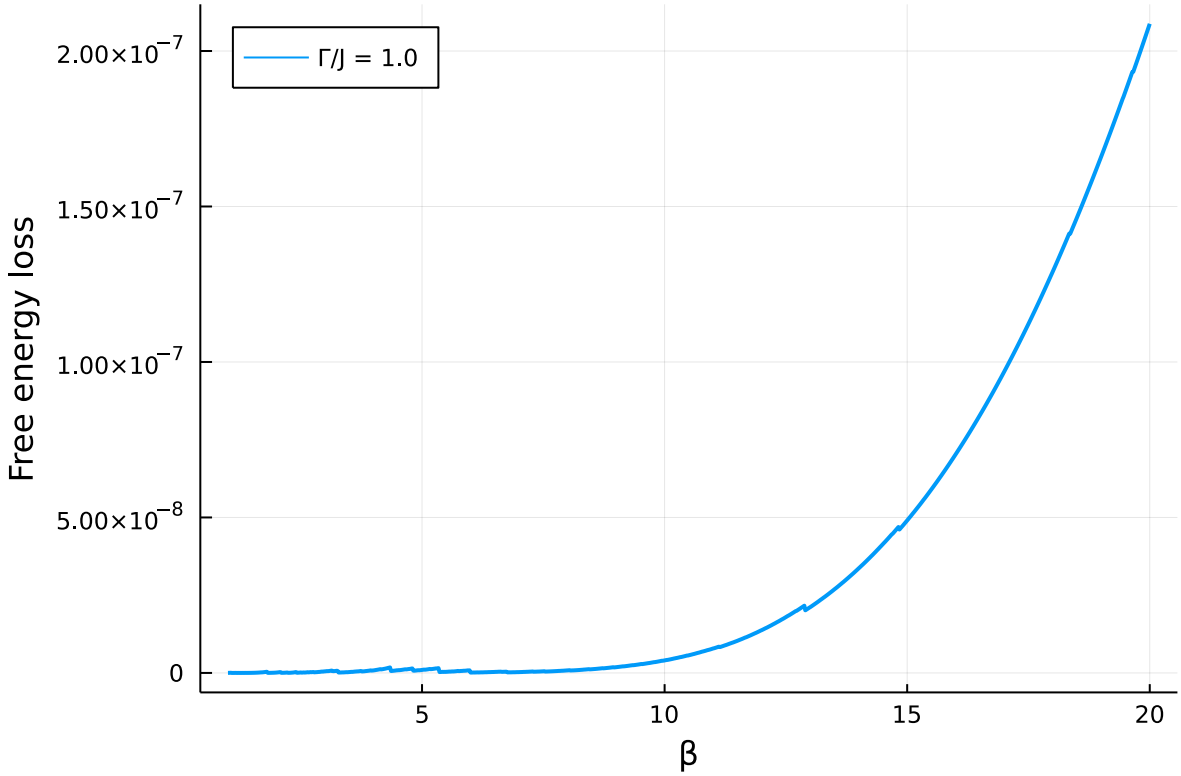
```
β = 20
```

```
"d1 = ../data/b_20.jld; d2 = ../data/f_and_sx_b_20.txt"
```

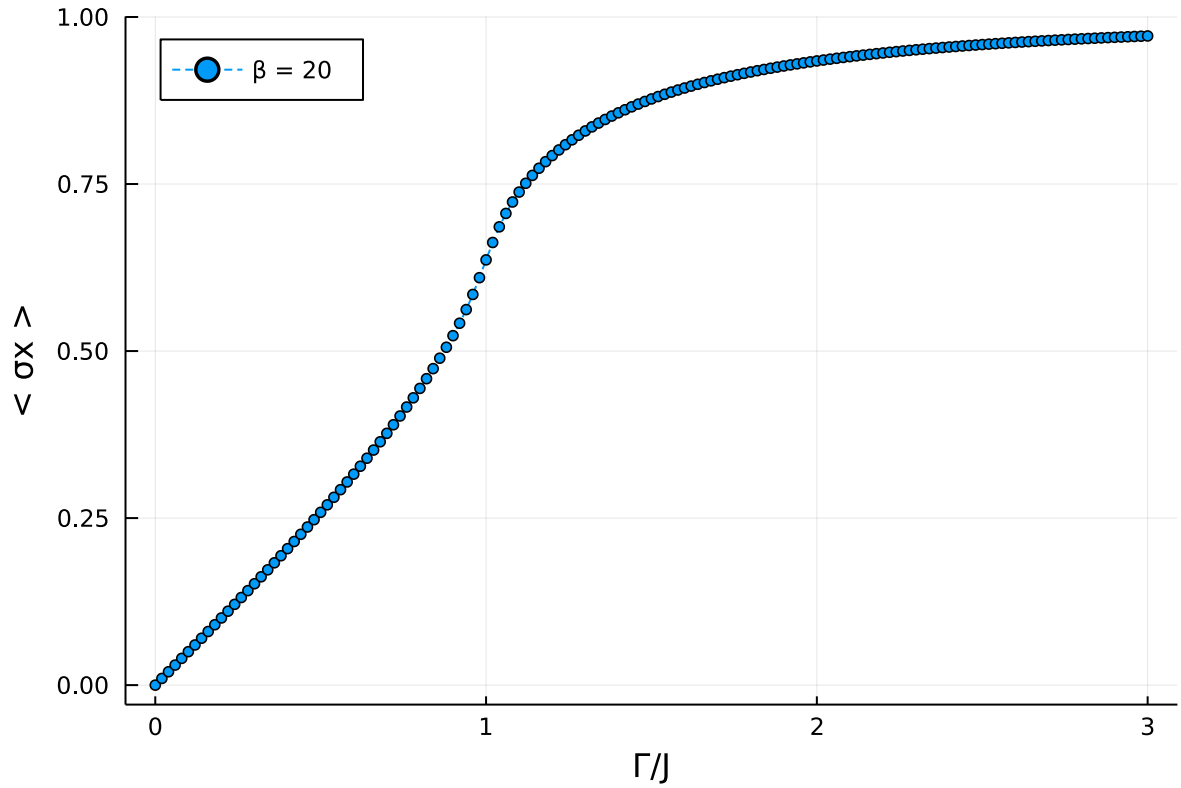



```
g = 1.0
```

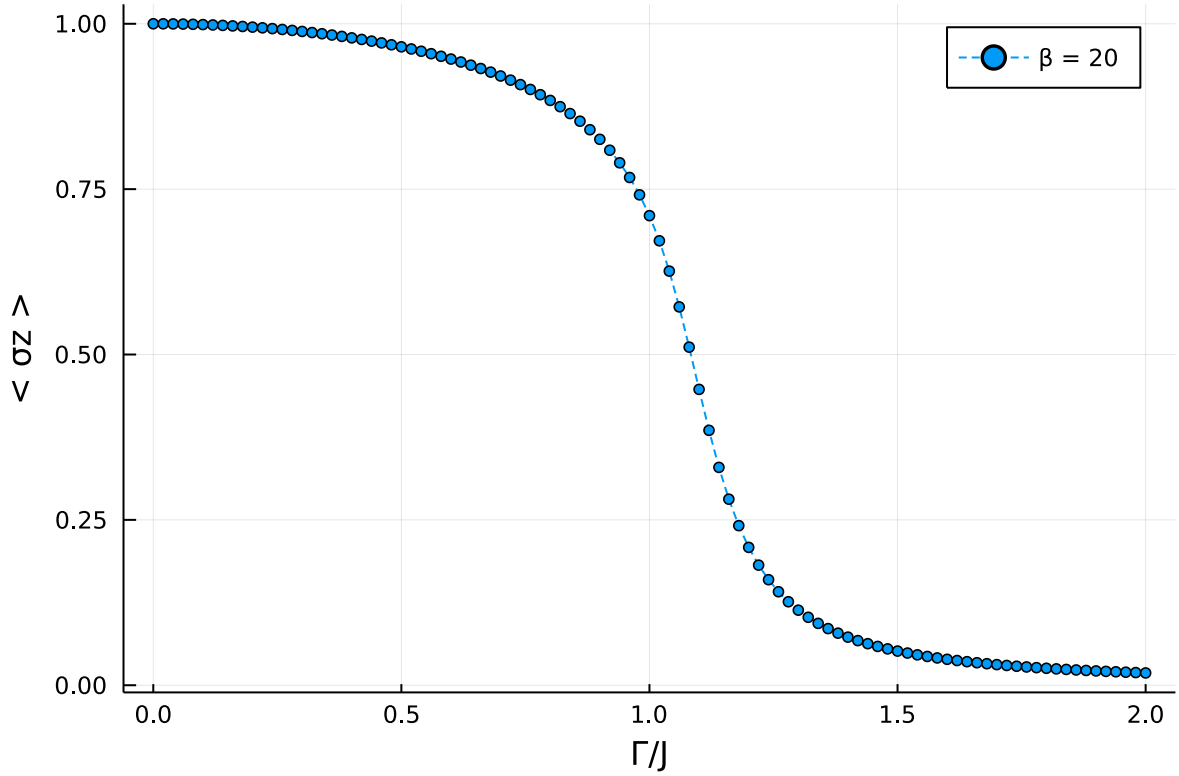
```
"d3 = ../data/g_1.0.jld; d4 = ../data/f_and_sx_g_1.0.txt"
```



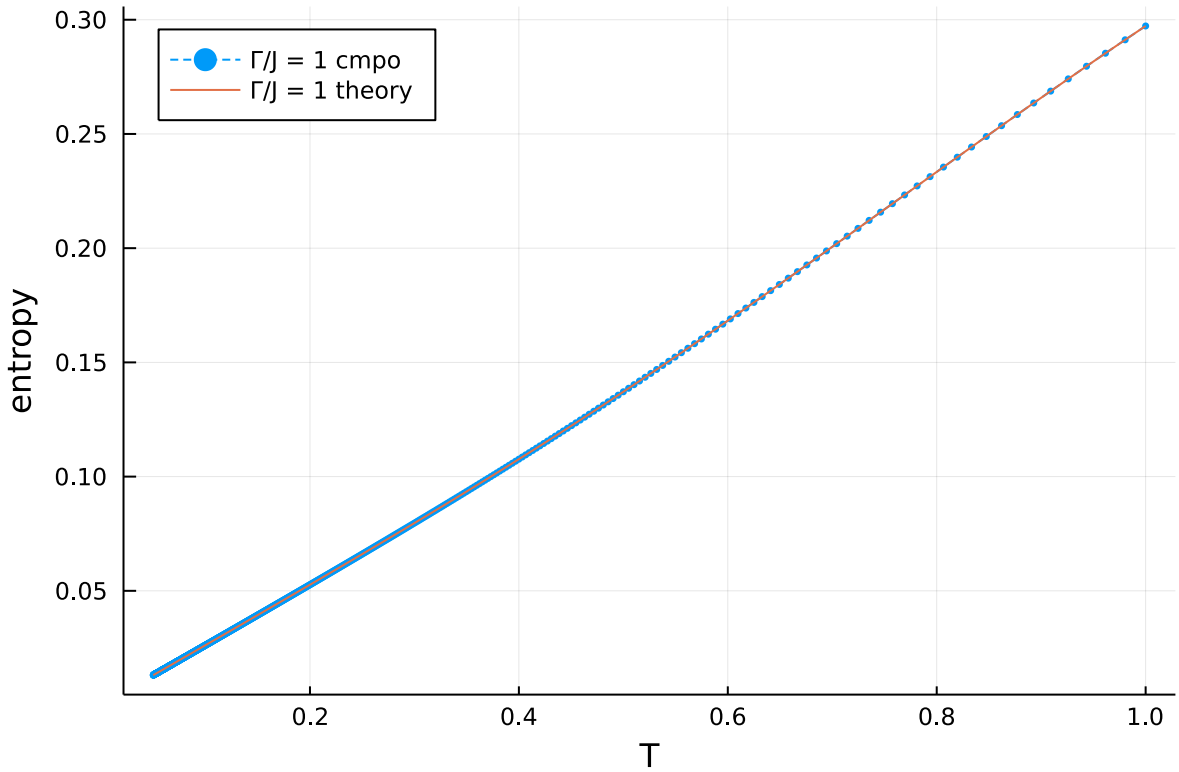
$\langle \sigma_x \rangle$ and $\langle \sigma_z \rangle$

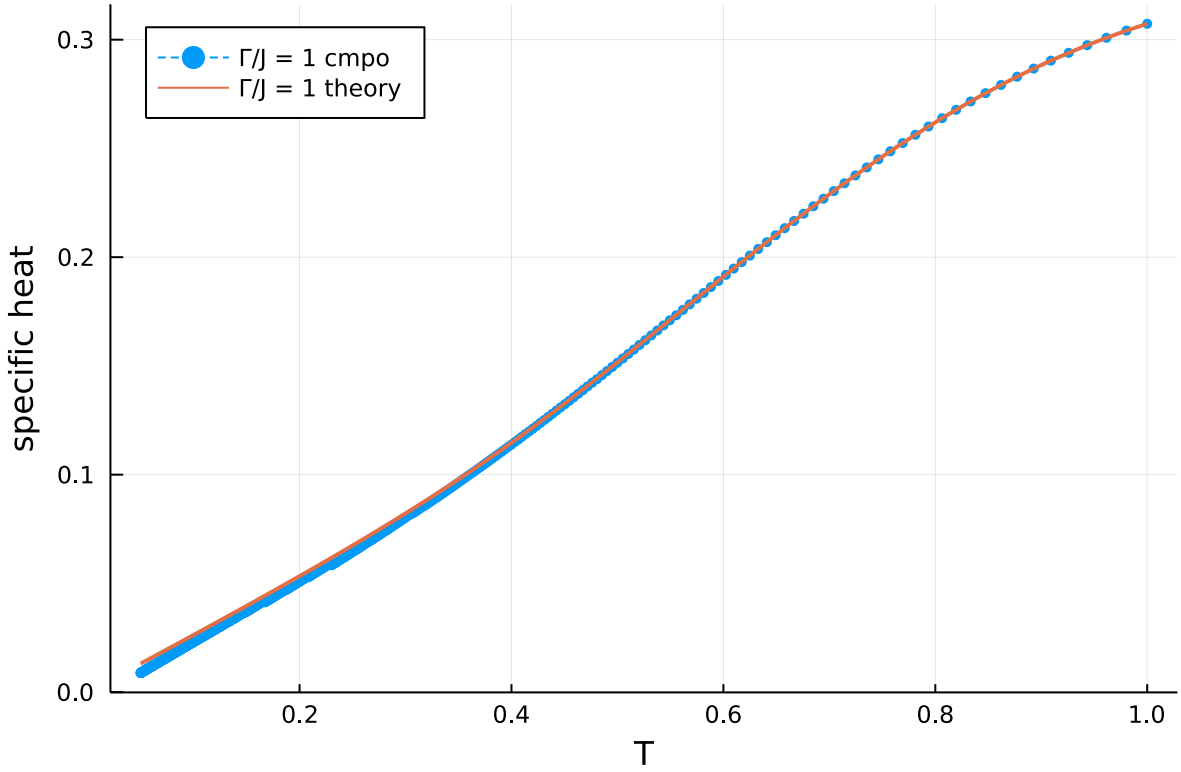



```
"d5 = ../data/sz_b_20.txt"
```

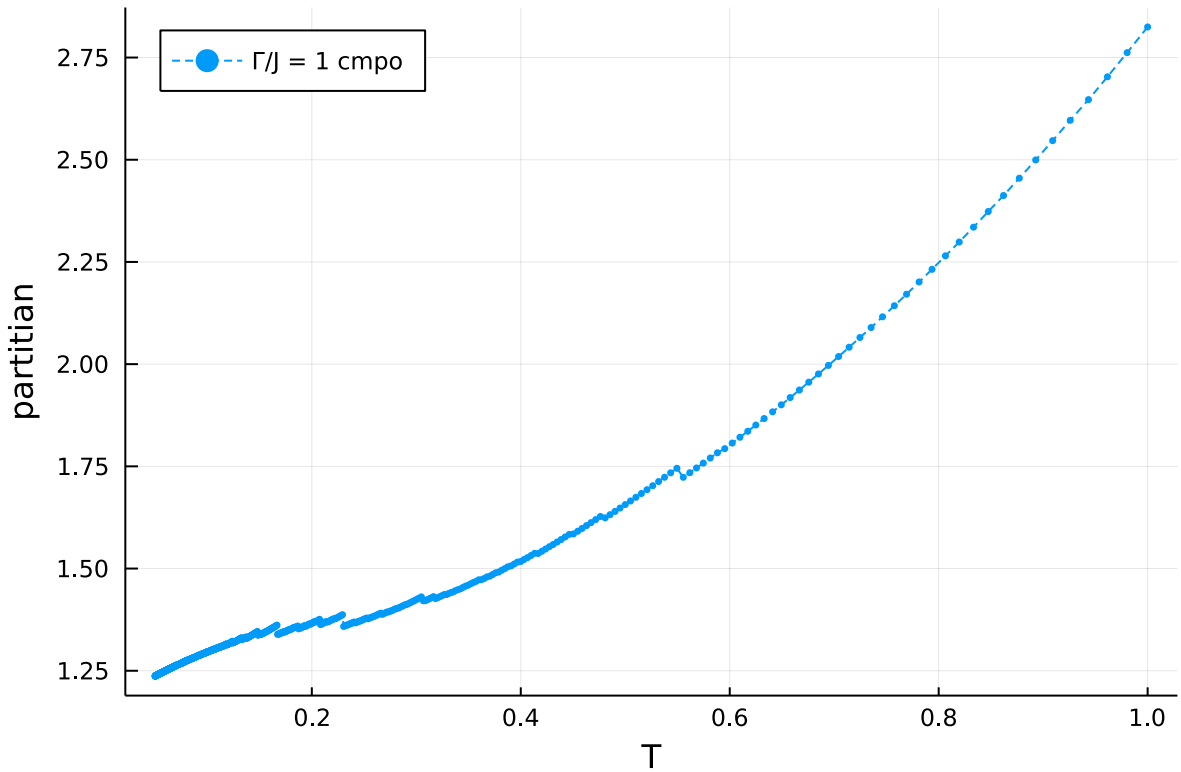


Entropy and Specific Heat

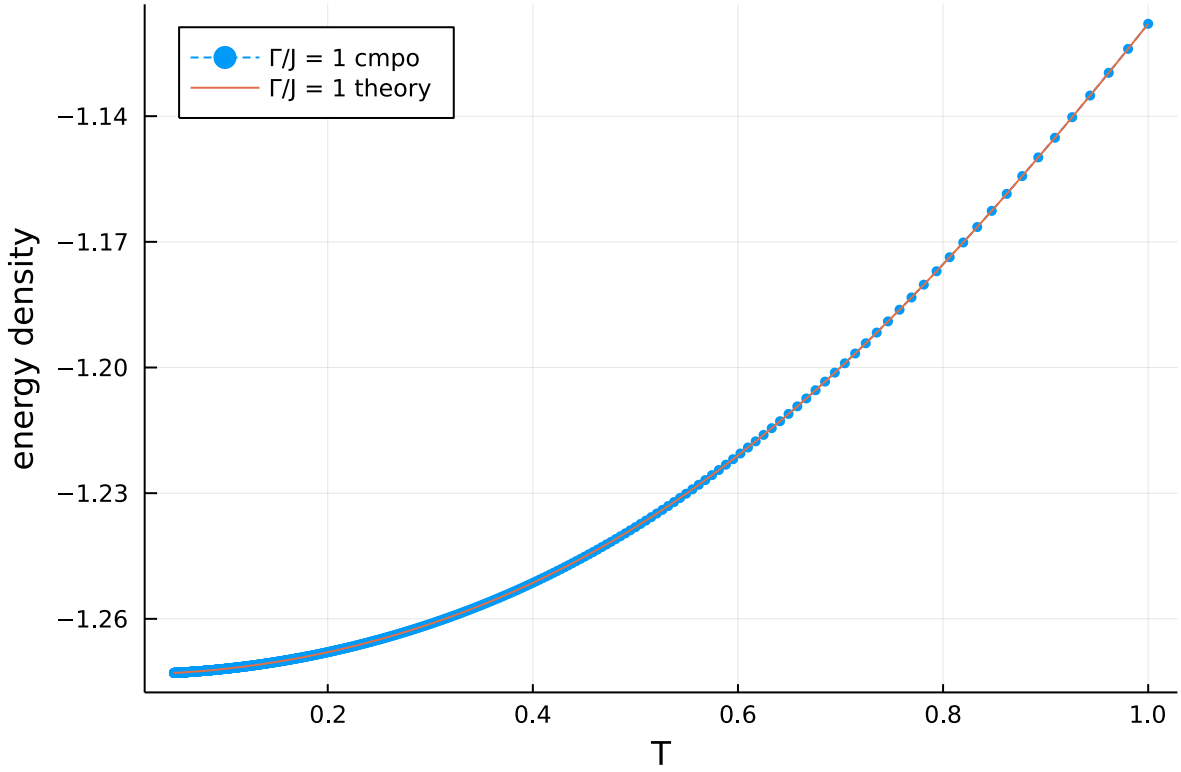




Partitian Function



Energy

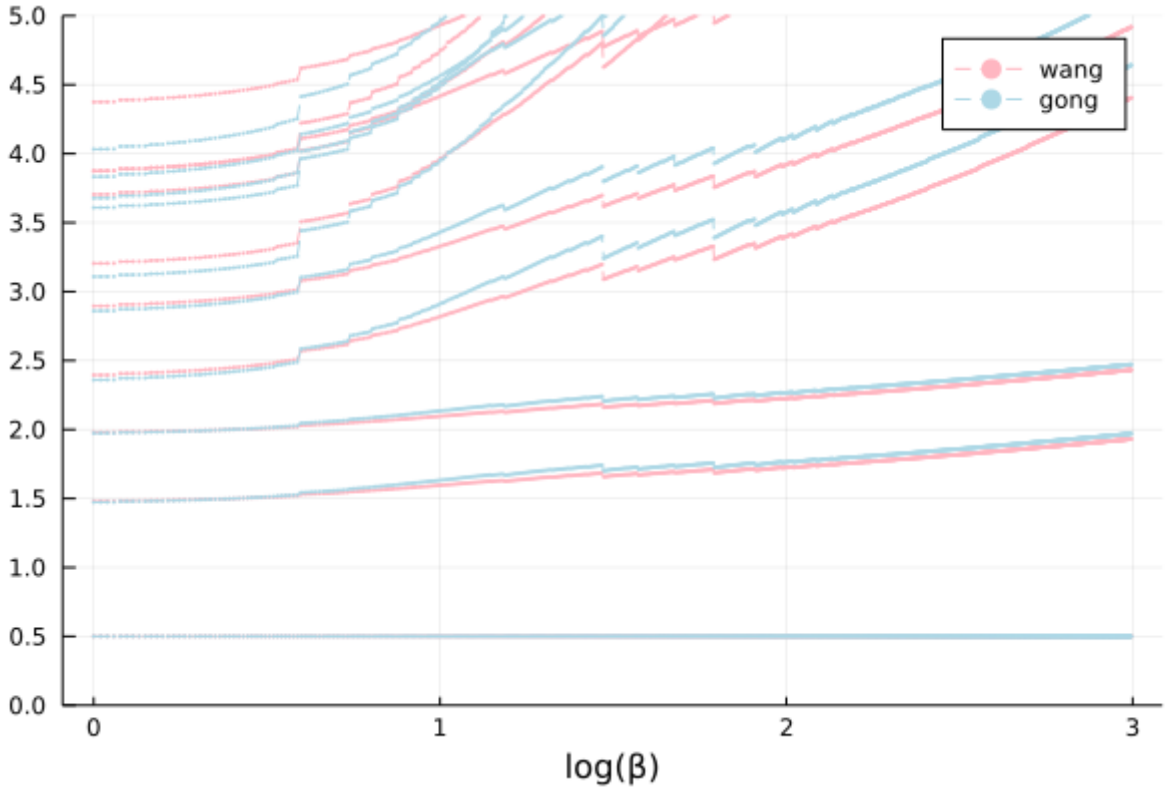


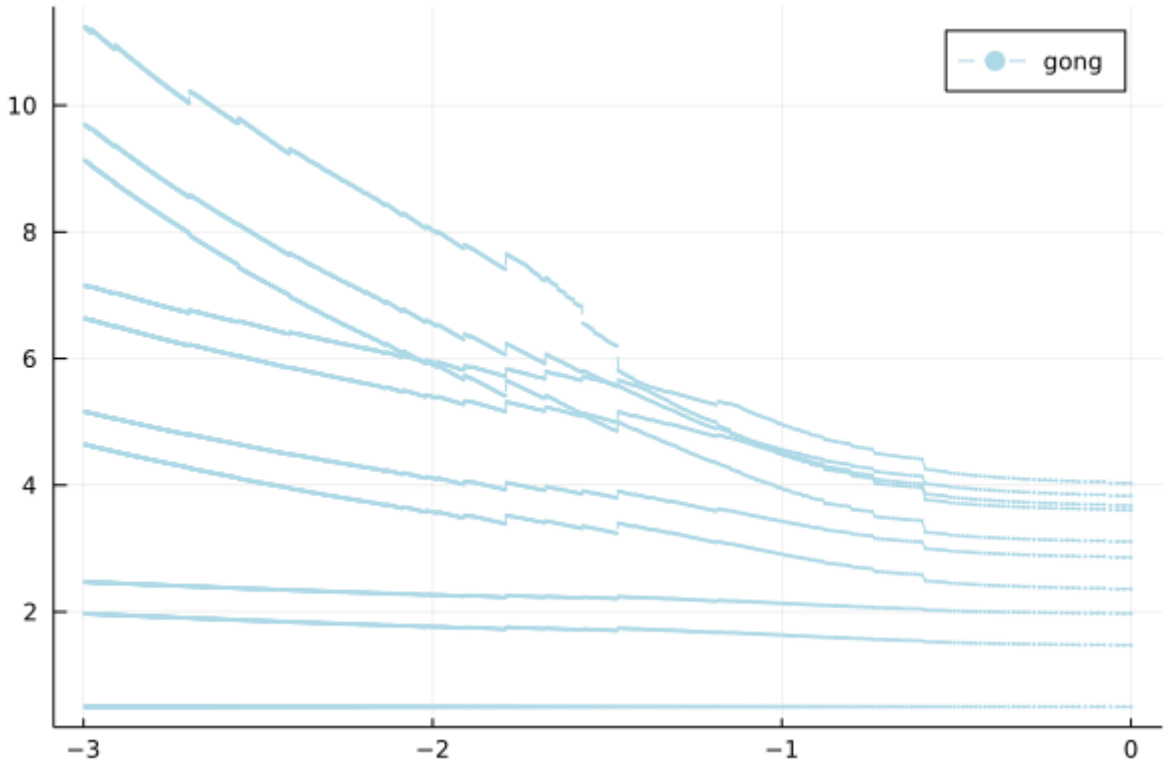
Spectrum of $\vdash + \dashv$ and $\vdash\dashv$

```
num = 10
```

```
" dE_gong and dE_wang "
```

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





"load packages"