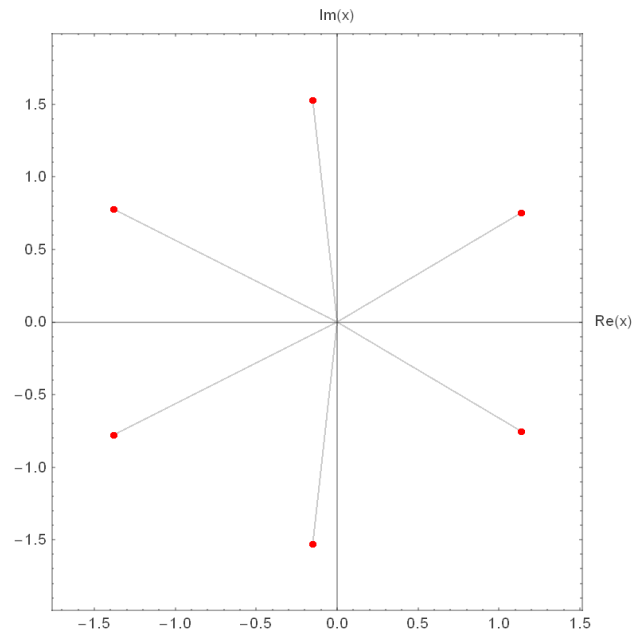


## Supplementary Materials File S4

### Complex roots of energetically allowed regions equations

#### Spike protein monomer S SARS



#### Spike protein monomer S SARS-CoV-2

