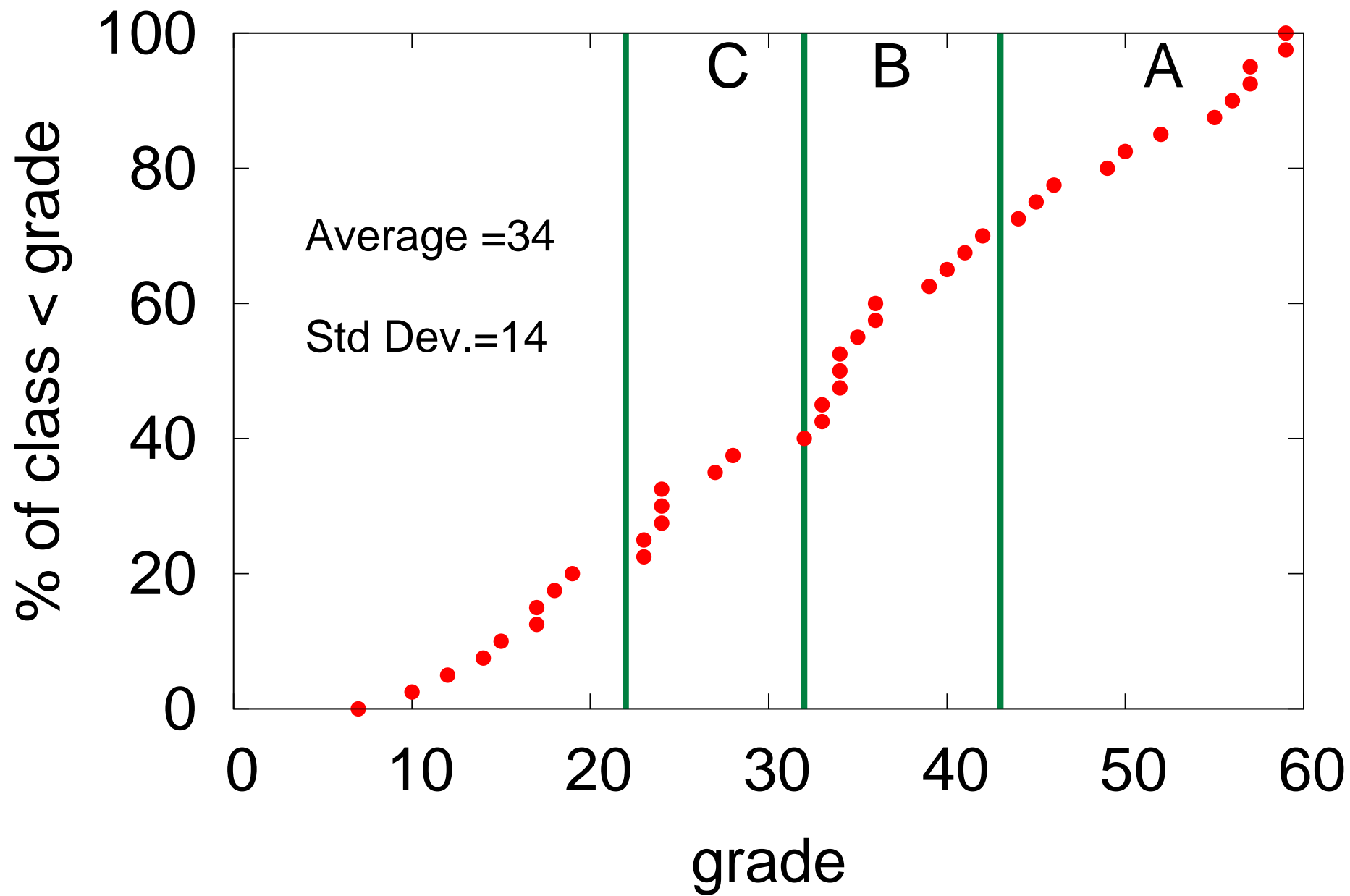


Exam 2



Electron Configurations in the Periodic Table

1 H 1s																	2 He 1s						
3 Li 2s	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne						
11 Na 3s	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar						
19 K 4s	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr						
37 Rb 5s	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe						
55 Cs 6s	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn						
87 Fr 7s	88 Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110	111	112	113	114										
		58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho									68 Er	69 Tm	70 Yb	71 Lu
		90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es									100 Fm	101 Md	102 No	103 Lr

by: Sarah Faizi

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Shell structure in the periodic table

Ionization Energy = Energy to rip off electron

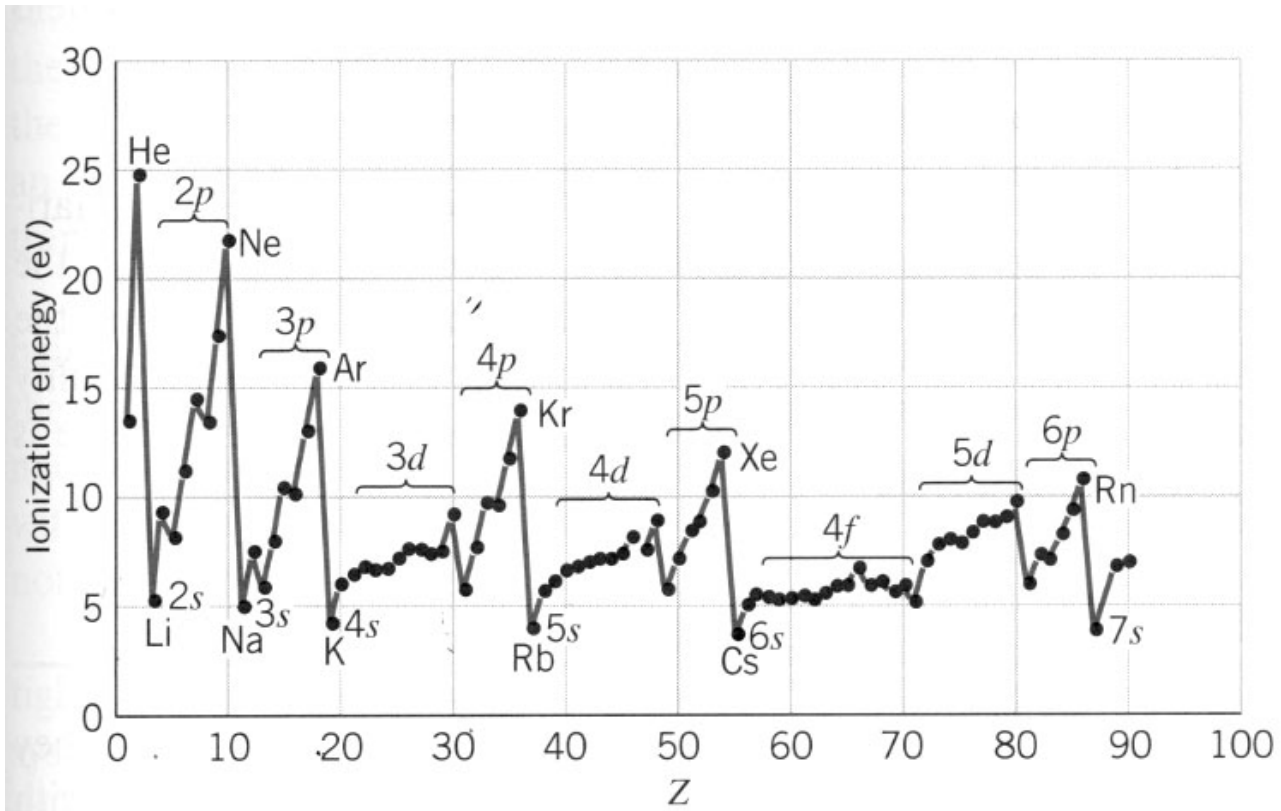
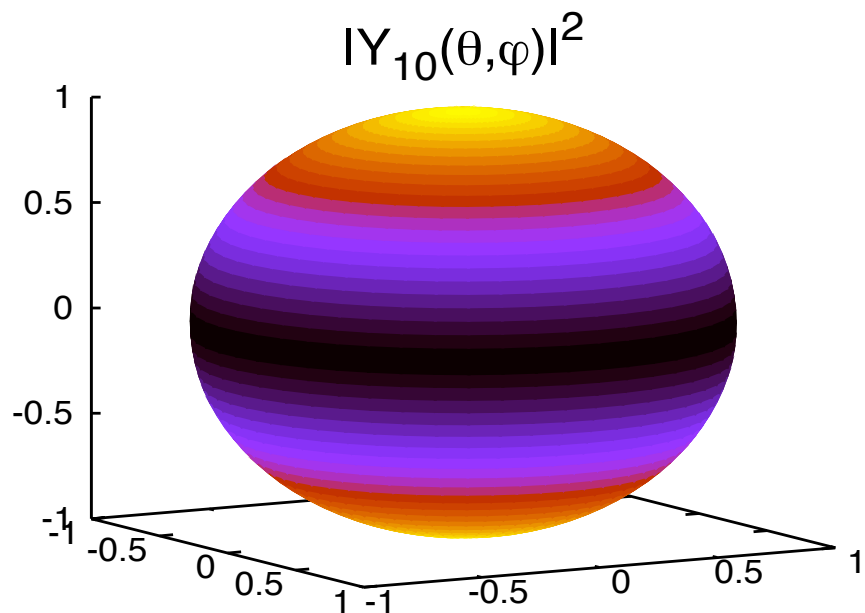
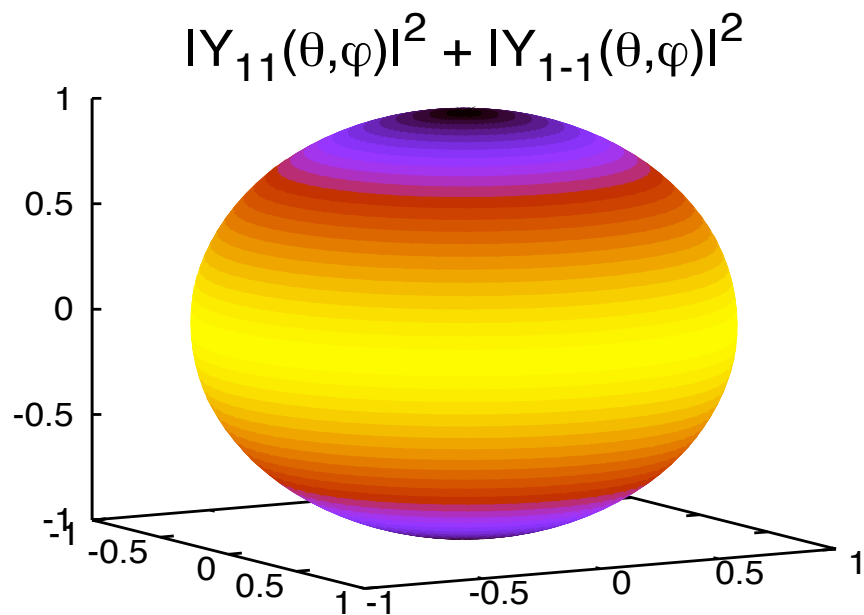


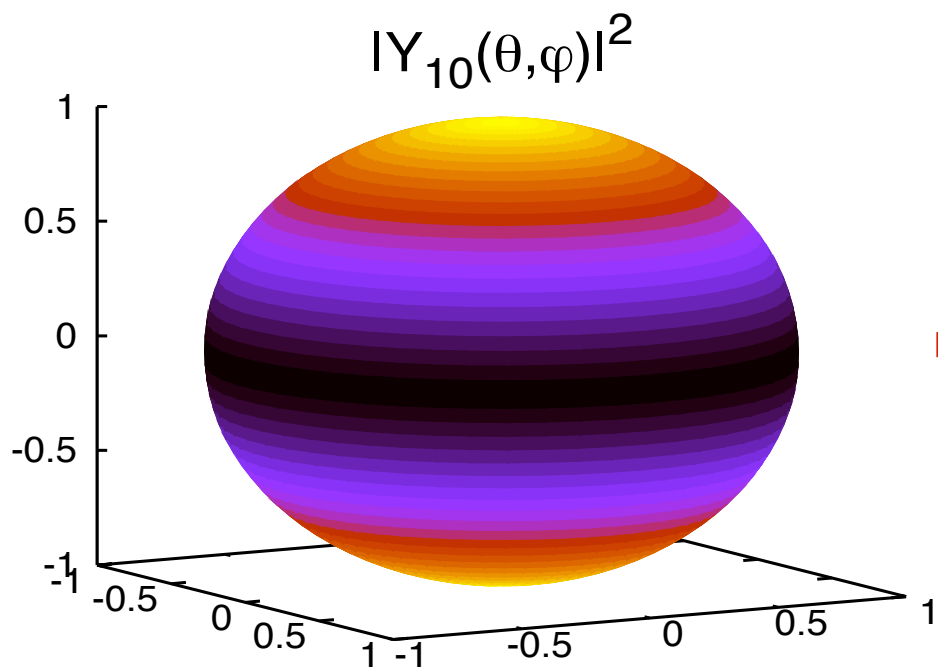
FIGURE 8.4 Ionization energies of neutral atoms of the elements.



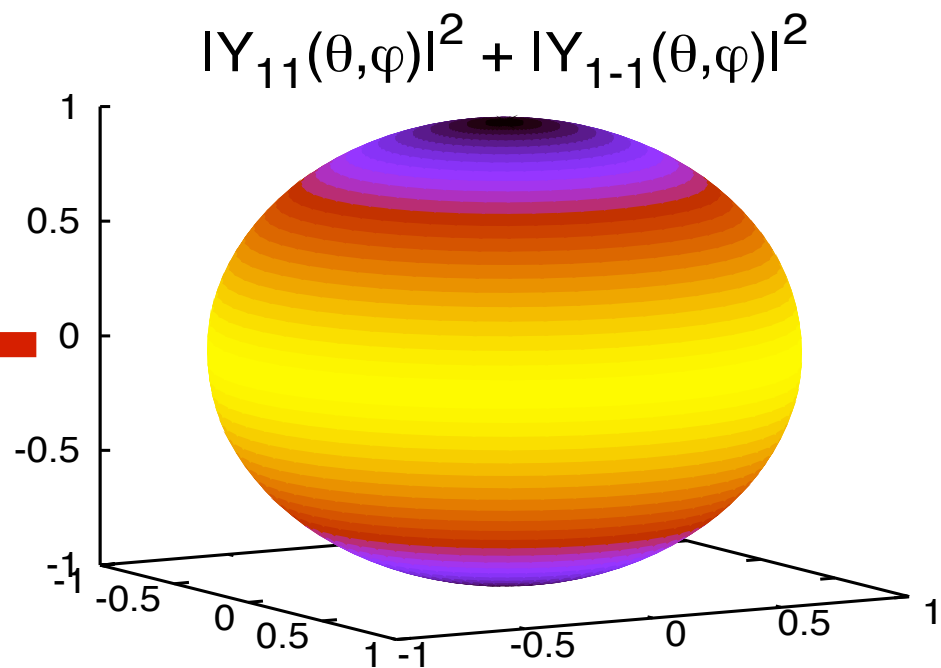
$m=0$ has Two half bumps on sphere



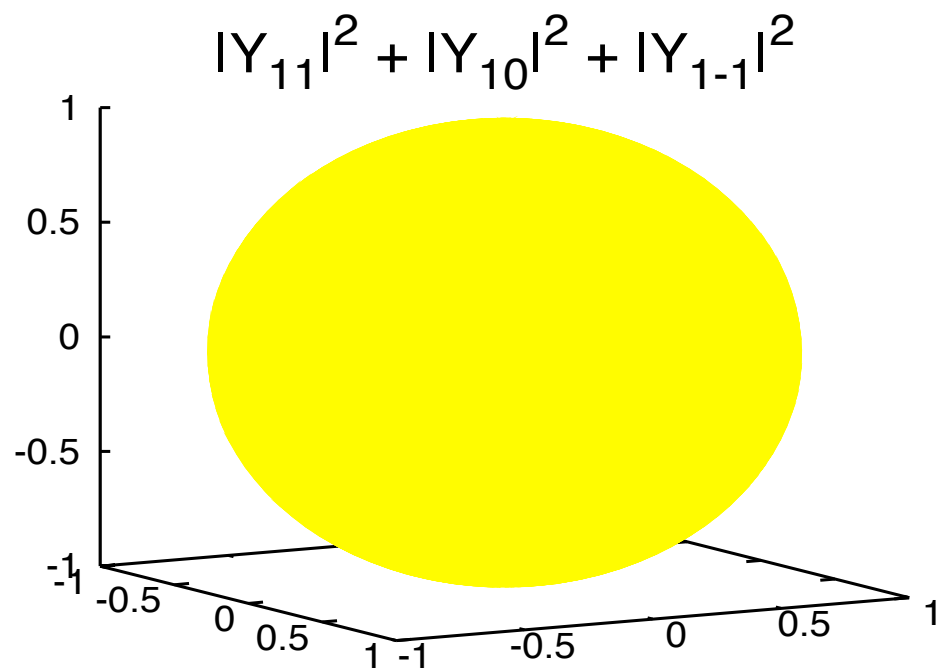
$m=\pm 1$ has One half bump



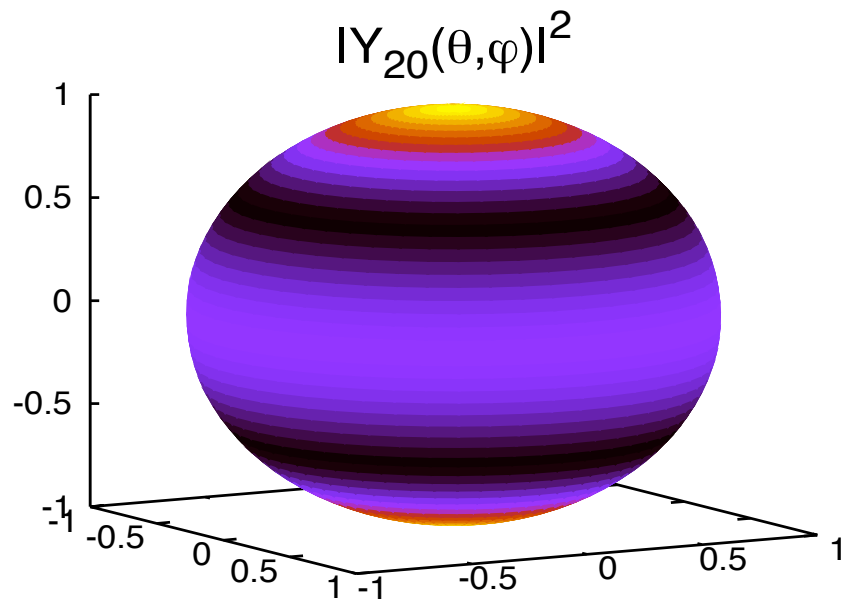
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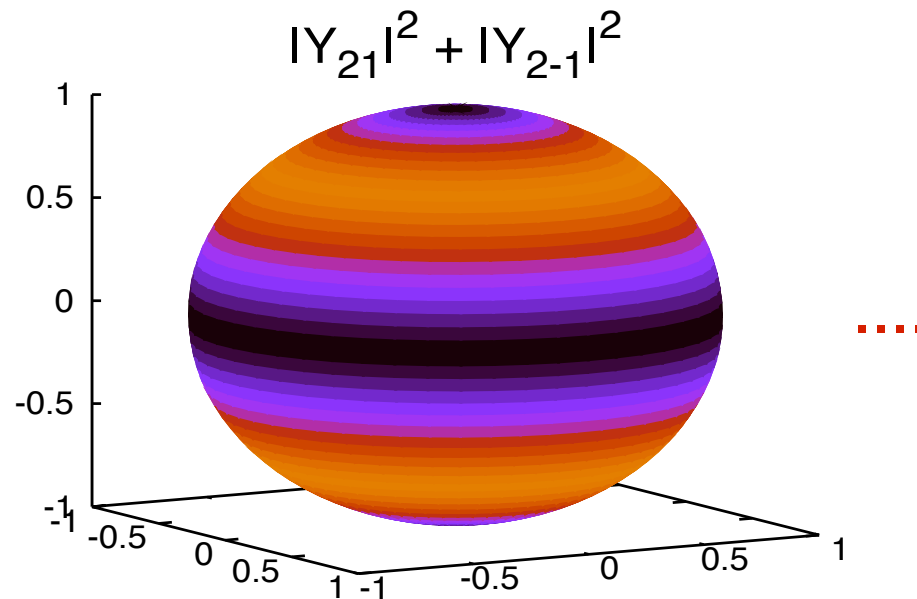
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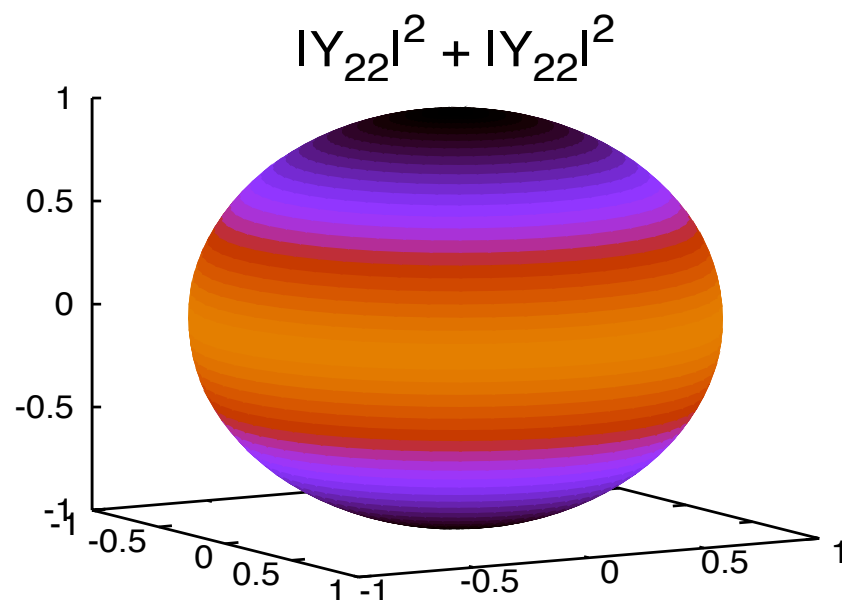
$m = 0$ has 3 bumps

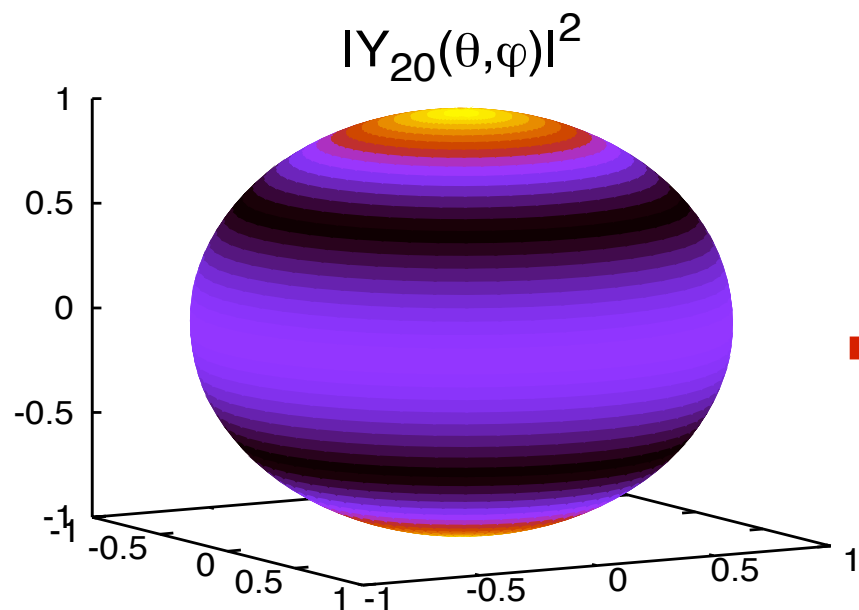


$m=1$ has two bumps

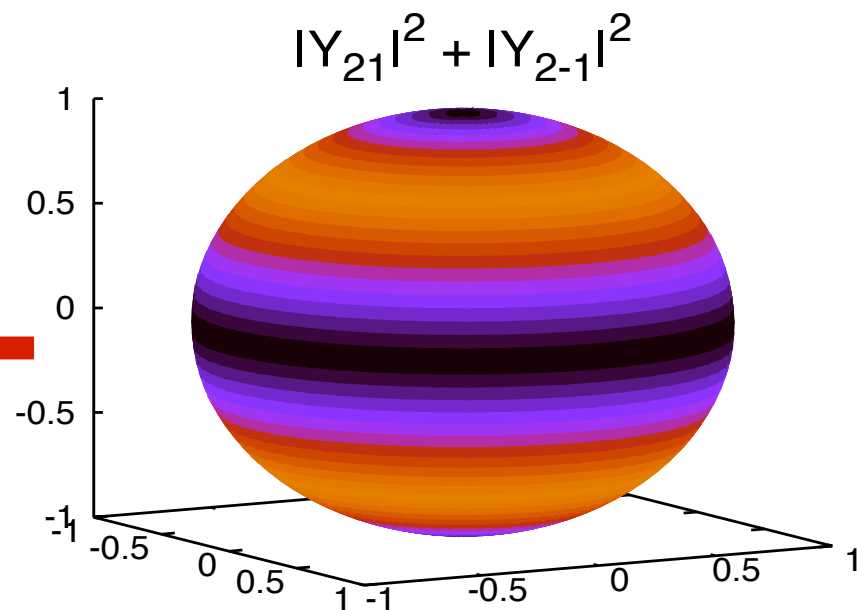


$m=2$ has one bumps

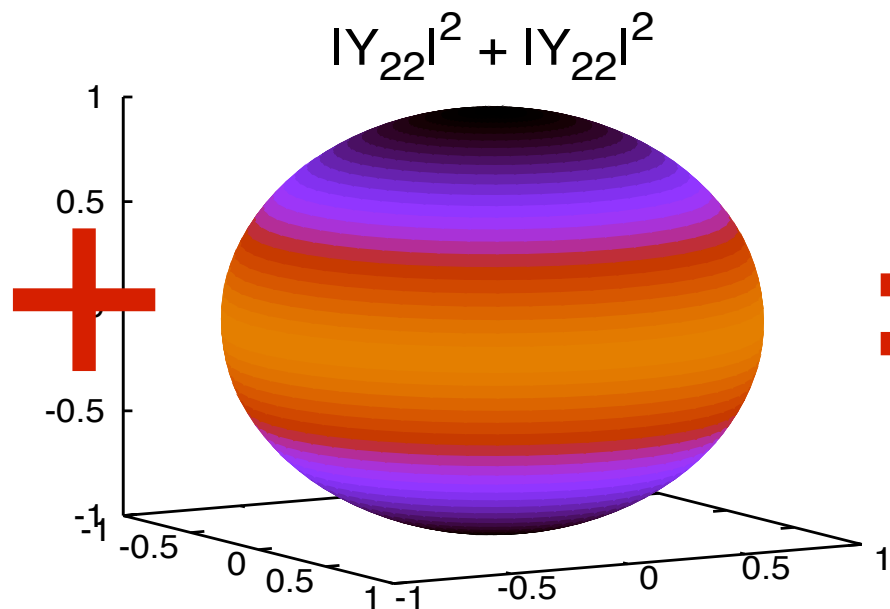




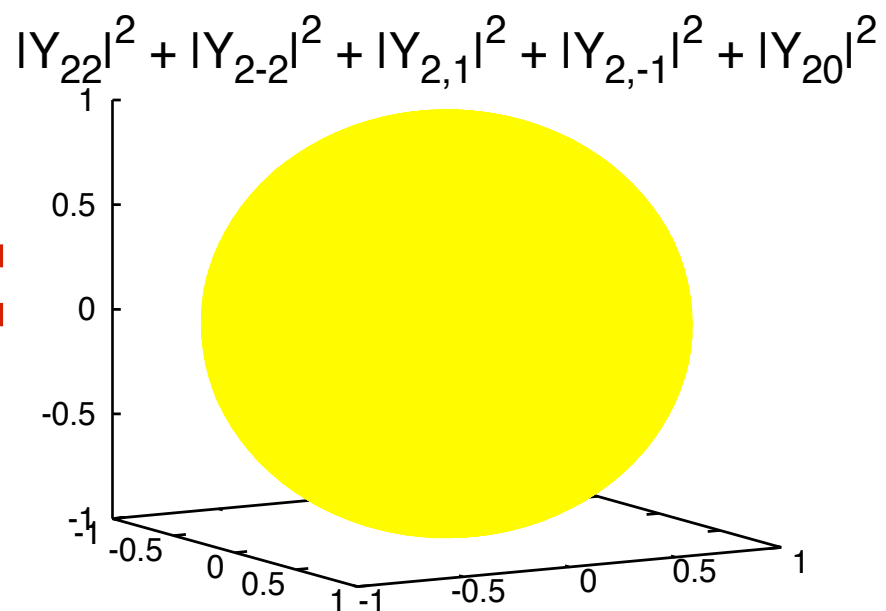
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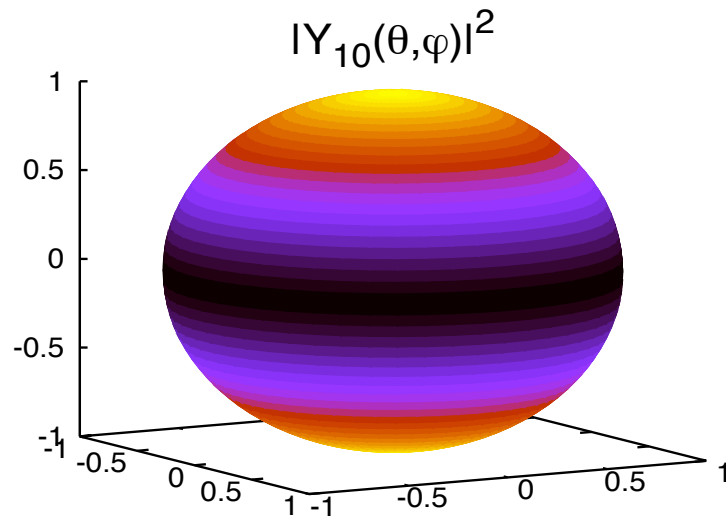
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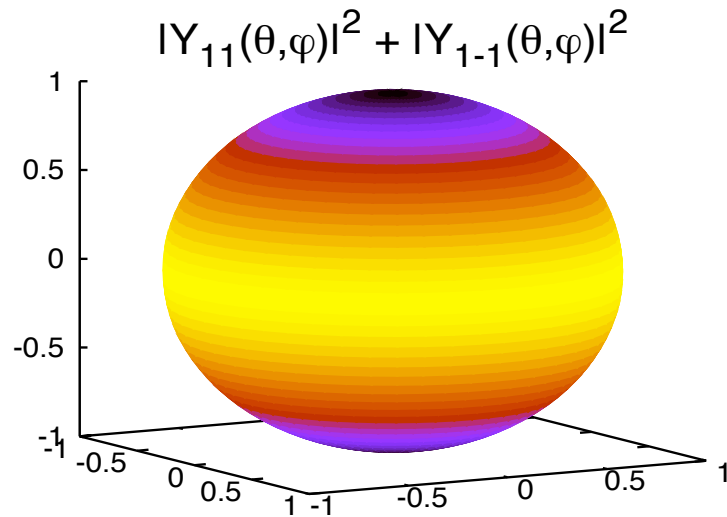
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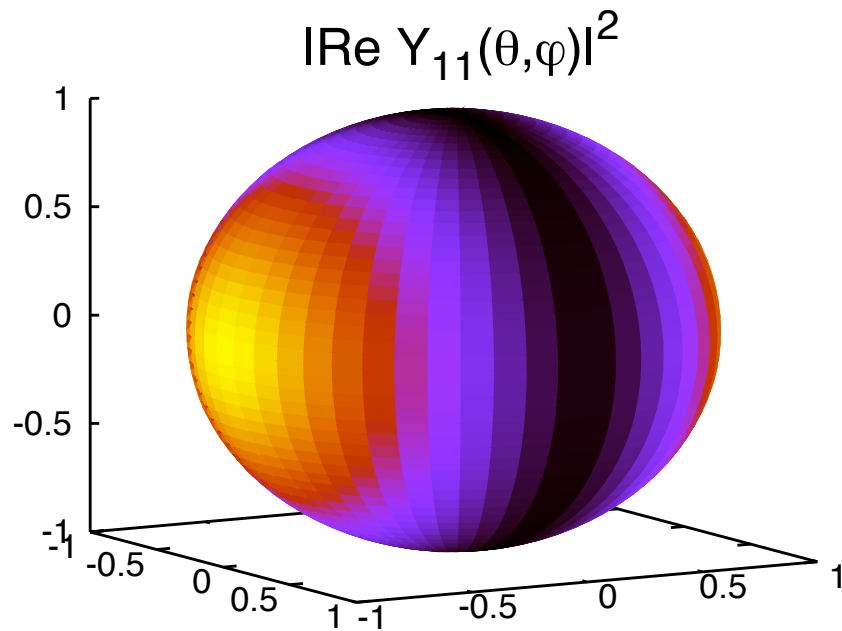
$L = 1$ Why does the $m = 1$ have one bump in θ while $m = 0$ has two?



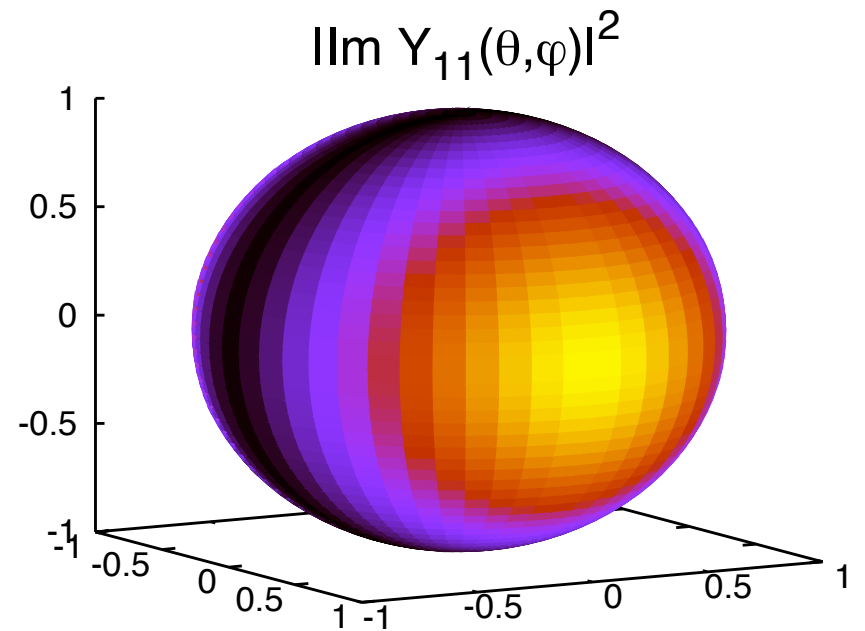
$m=0$ has Two half bumps on sphere



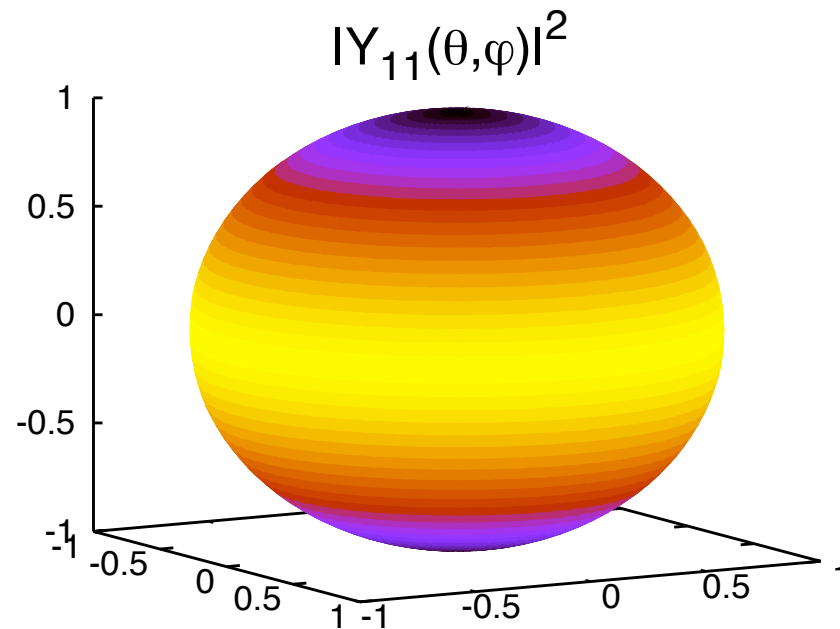
$m=\pm 1$ has One half bump



+



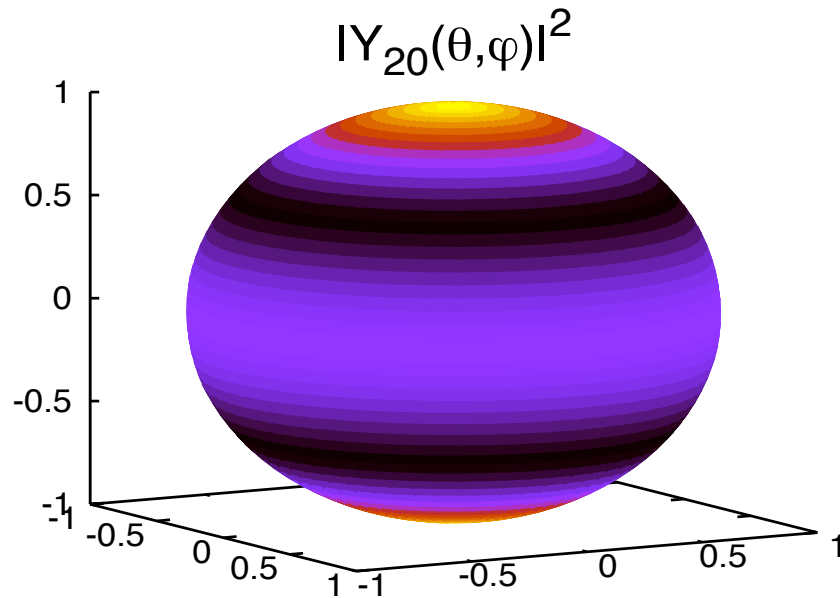
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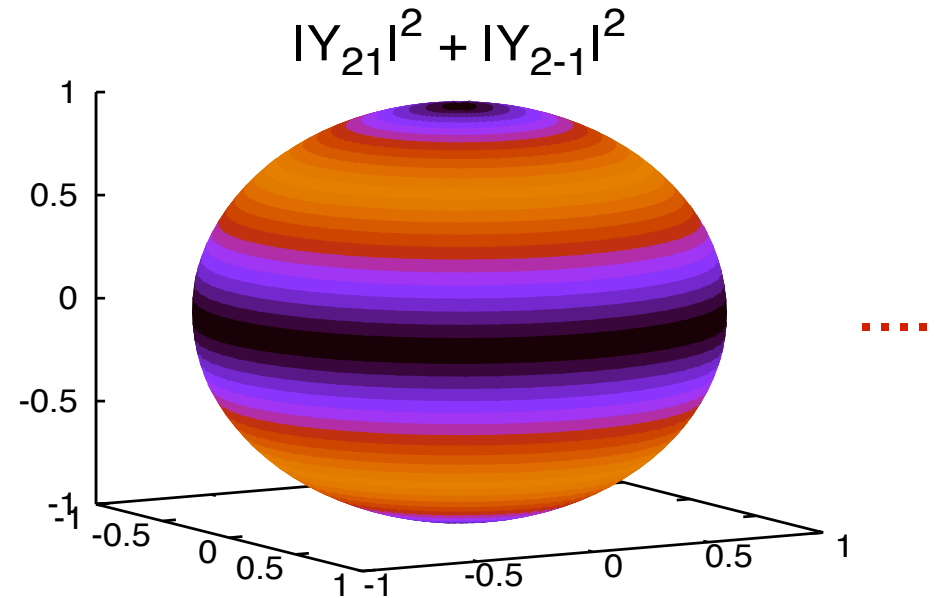
There is angular variation in phi direction

$L = 2$ Why does the $m = 2/1$ have one bump/two bumps in θ while $m = 0$ has three?

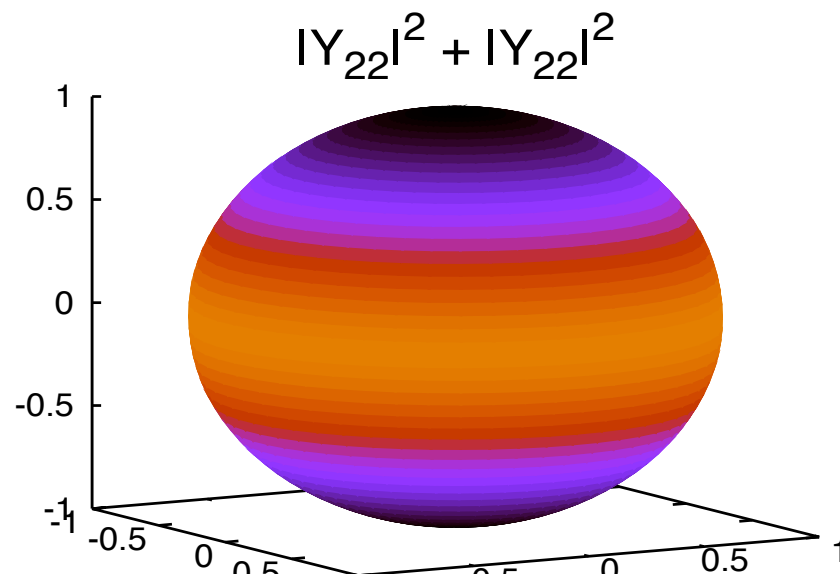
$m = 0$ has 3 bumps



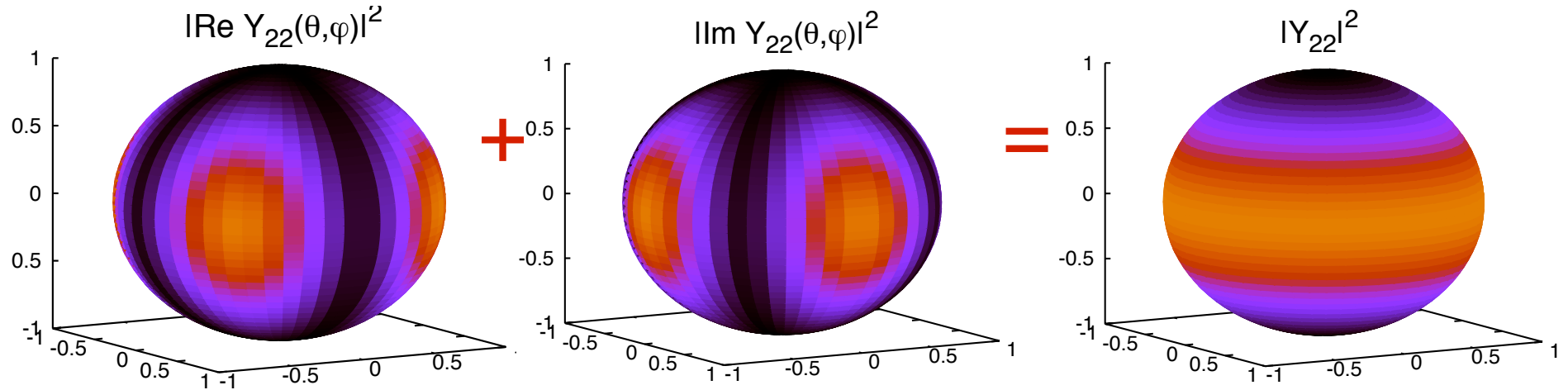
$m=1$ has two bumps



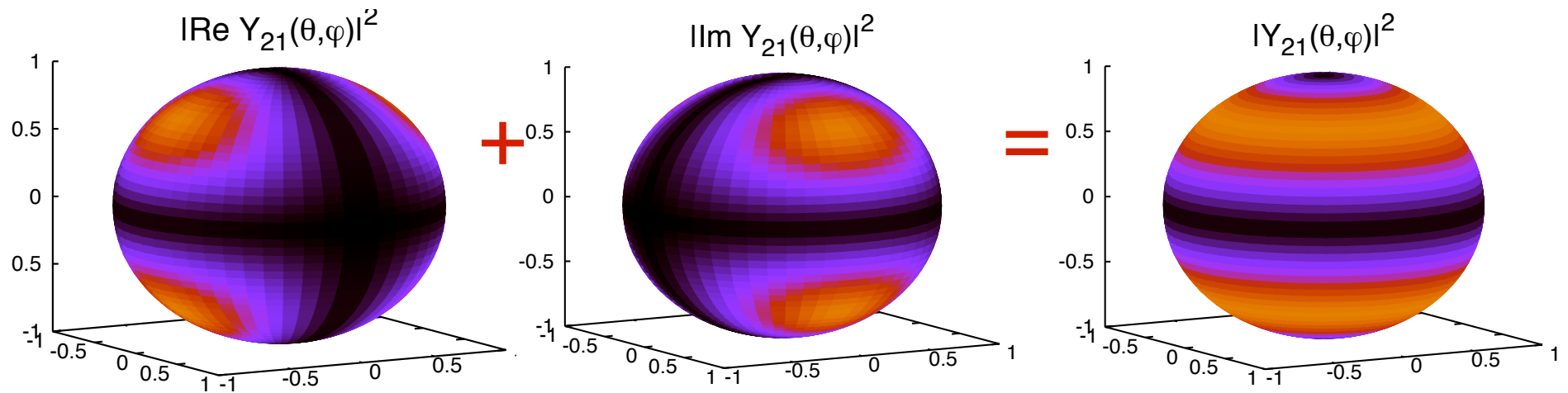
$m=2$ has one bumps



M=2



M=1



There is angular variation in phi direction