

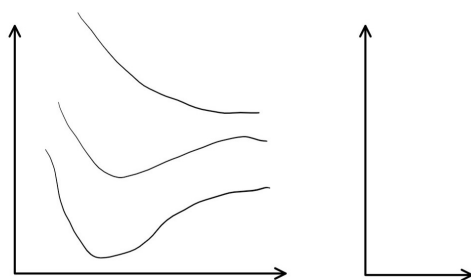
Grundkonzepte Quanten
Nachklausur WiSe 18/19
Roland Wester, Martin Beyer

Wester:

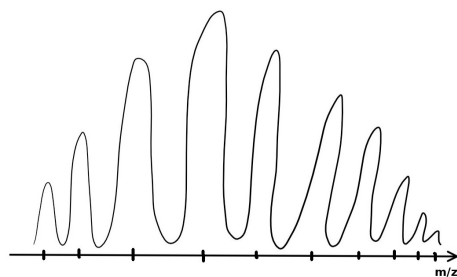
- 1) a) Molecular structure of Li_2^+
b) Binding energy with respect to Li_2 (lower/higher?)
- 2) a) Give the first four rotational modes of biatomic molecule, connection to rotation constant. How can you estimate the radius?
b) Which frequency do you expect for rotations of CO and how to set up measurement?
- 3) a) Thomson has barrier, why?
b) Explain influence Polanyi rules on vibrational excitation effect on reactions.

Beyer:

- 4) a) Explain in one sentence: What is photodissociation and reaction equation?
b) Name axis and plot the spectrum on the right and possible transitions on the left.



- 5) a) Name two soft ionization methods and say why EI/CI does not work.
b) Calculate mol z from the following figure. Average $m/z = 1129,479 \text{ u}$



- 6)
 - a) Setup of plasma discharge
 - b) Explain plasma discharge with (a).
 - c) Of what consists the current at the methode?