

# Collision between single atoms in optical tweezers

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# Scattering length $a$

- Binding energy
- Molecular potential
- Feshbach resonance
- Molecule formation
- ⋮

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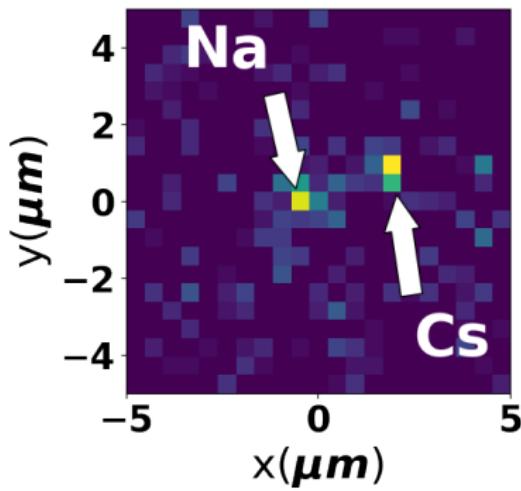
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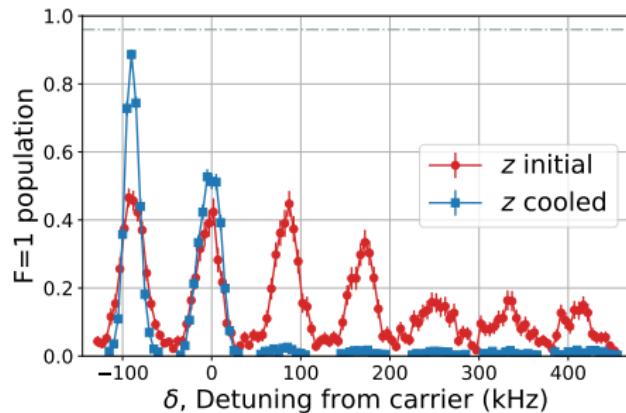
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- $\vdots$

# Loading



Loading probability per site: 60%  
Post select on initial and final state.

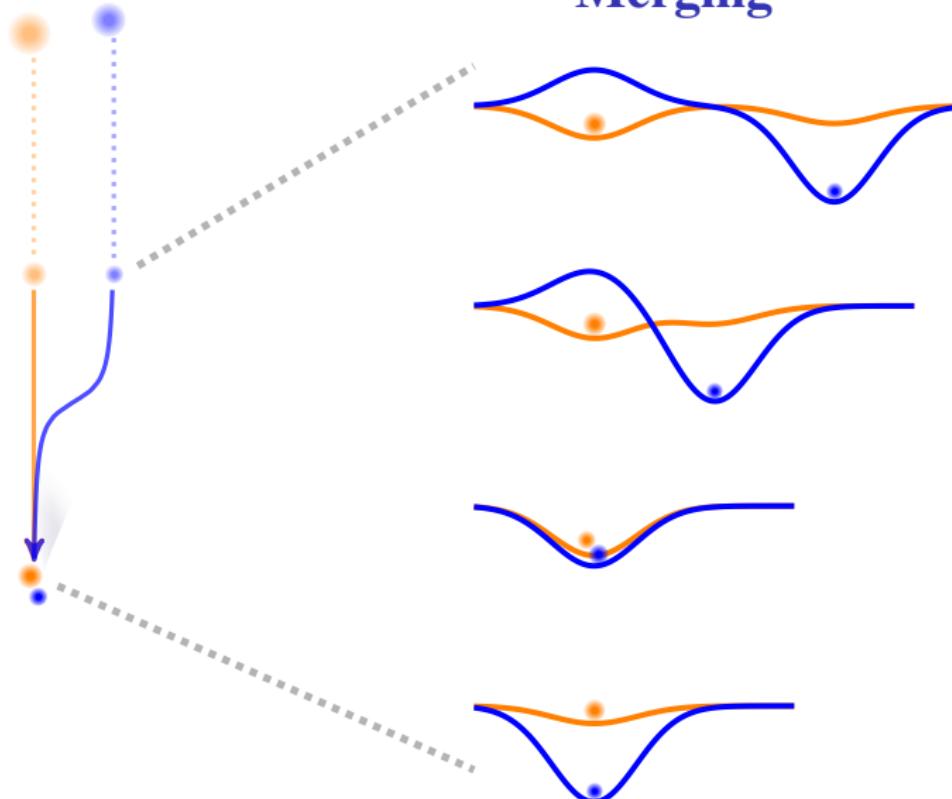
# Cooling



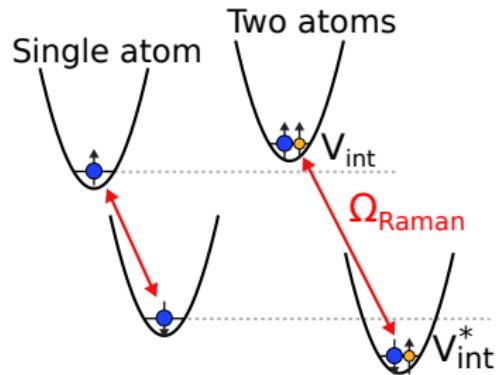
Cs: 96% ground state

Na: 94% ground state

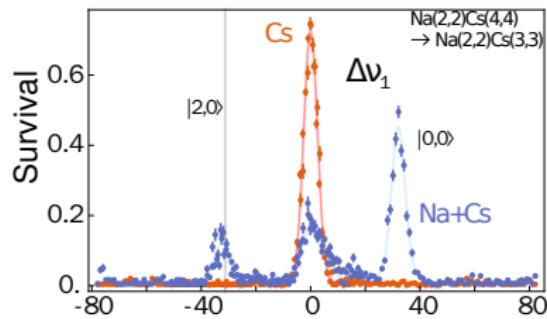
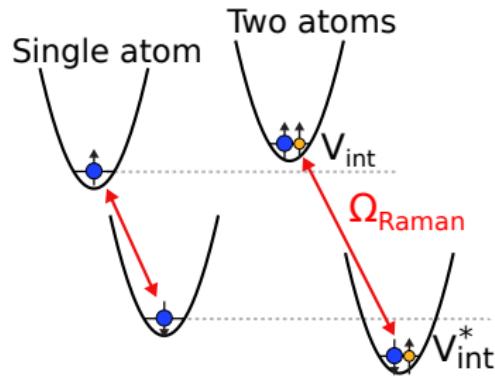
# Merging



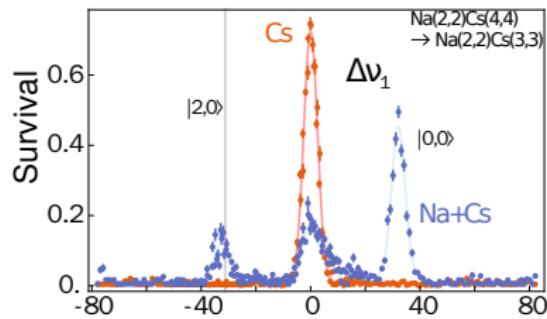
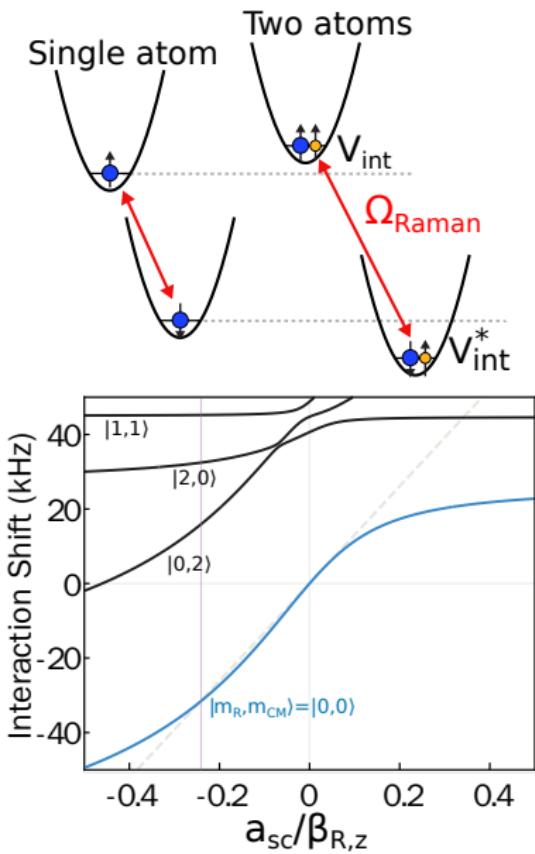
## Interaction shift



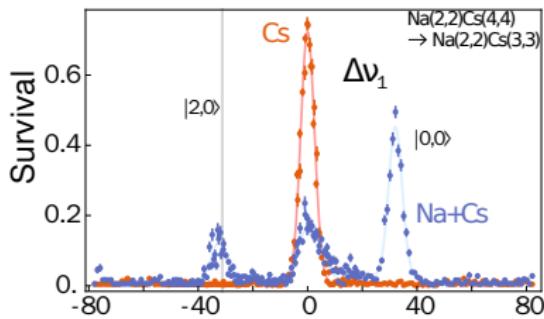
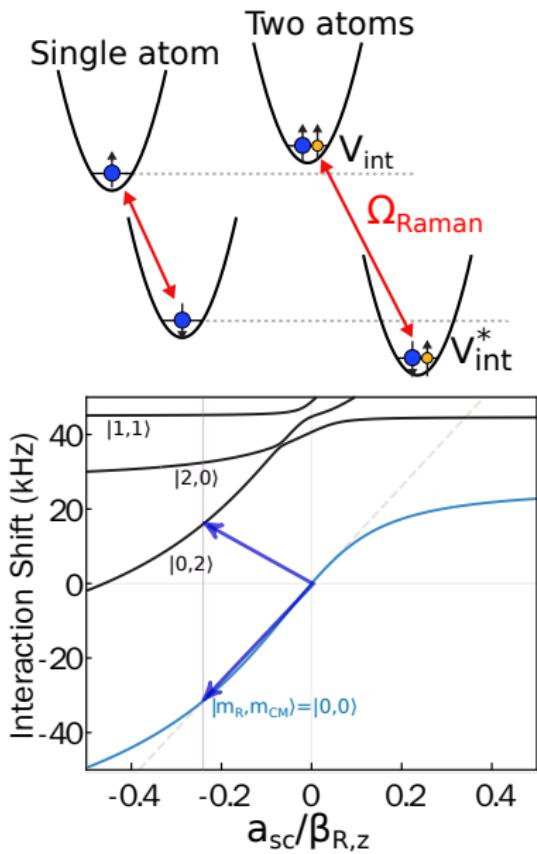
## Interaction shift



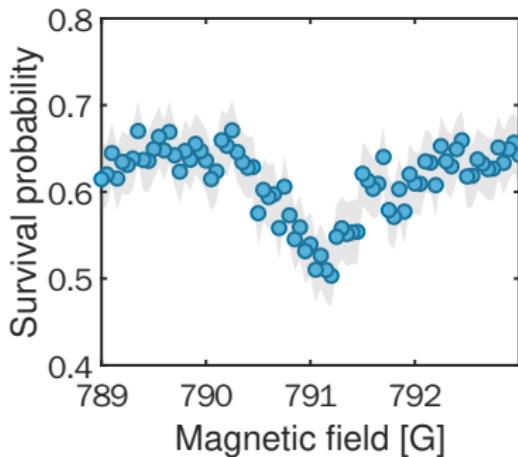
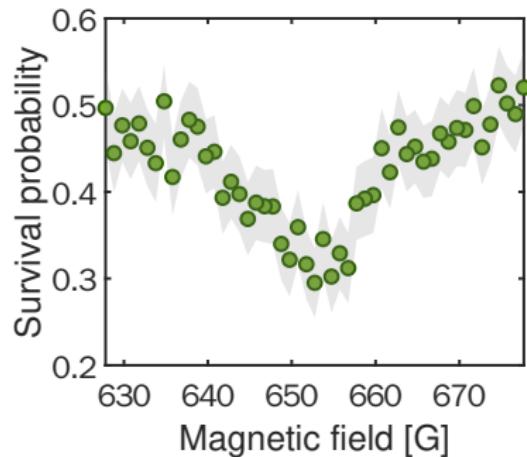
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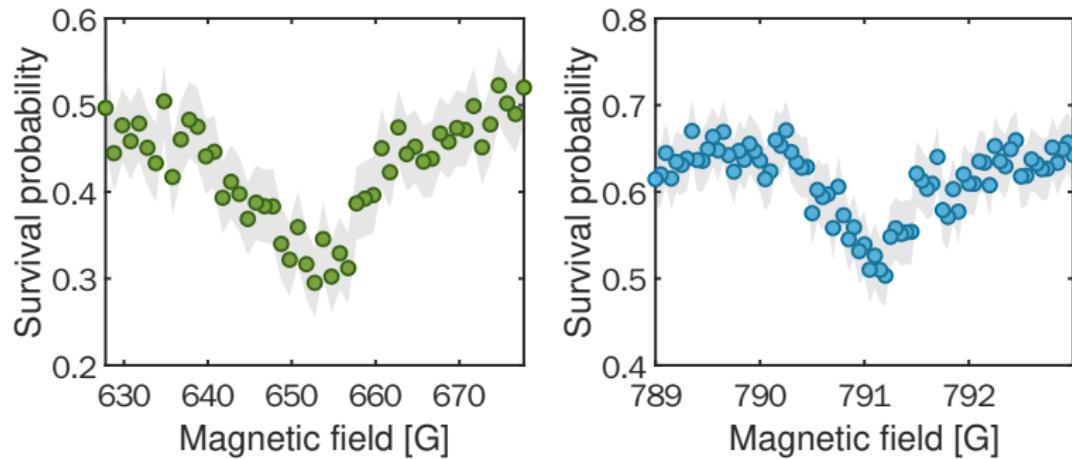
# Interaction shift



## Feshbach resonance



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	<i>s</i> -wave	<i>p</i> -wave
Predicted (MQDT)	663 G	799 G
Measured	652(3) G	791.2(2) G

## Next step

- Make Feshbach molecules
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Thank you for your attention.