

Collision between single atoms in optical tweezers

Yichao Yu

Lee Liu, Lewis Picard, Kenneth Wang, Dr. Jon Hood

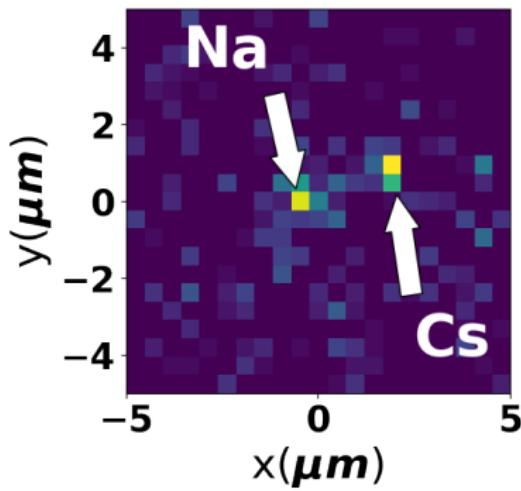
Ni Group/Harvard

March 27, 2019

Scattering length a

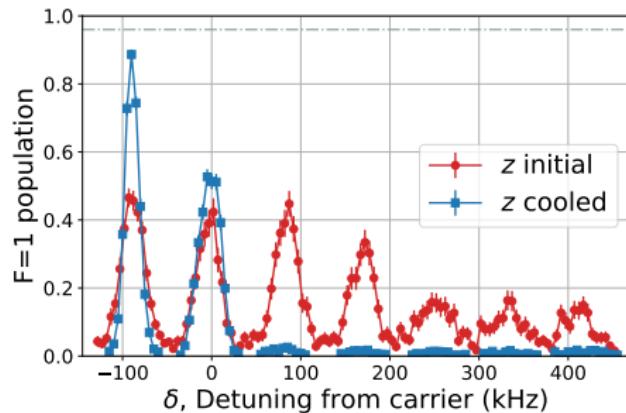
- Binding energy
- Molecular potential
- Feshbach resonance
- Molecule formation
- \vdots

Loading



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

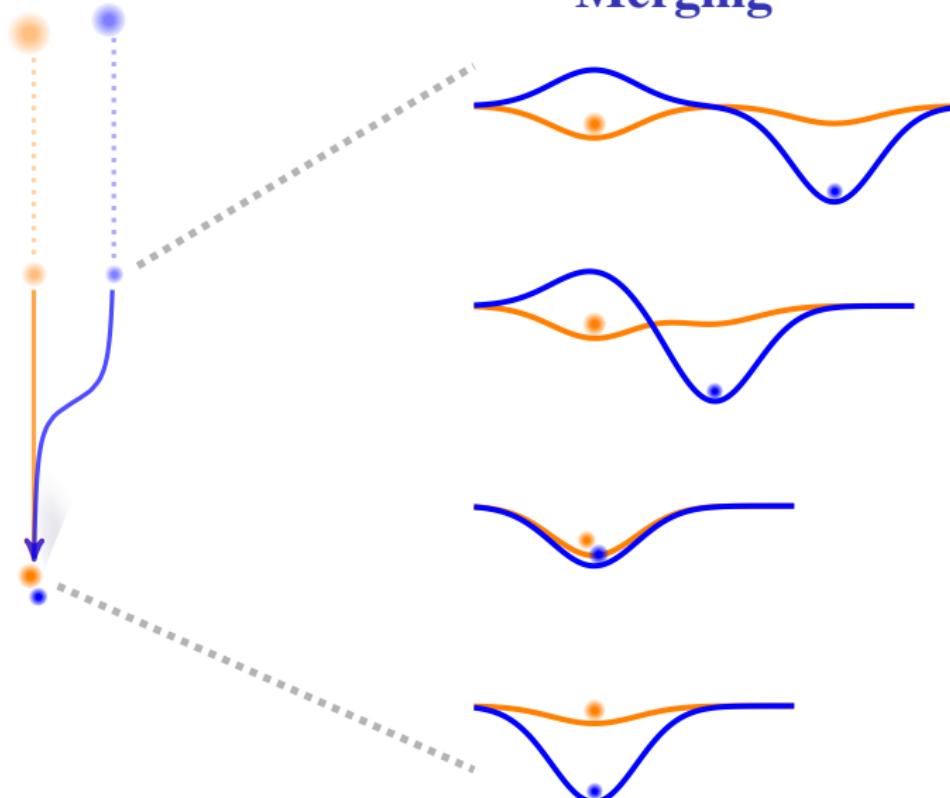
Cooling



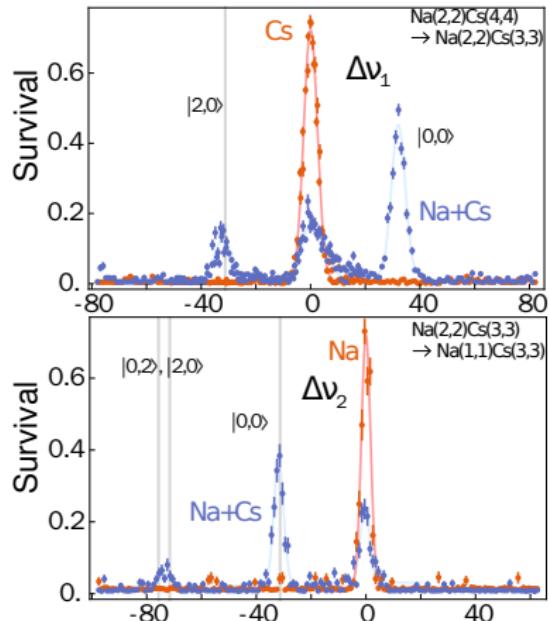
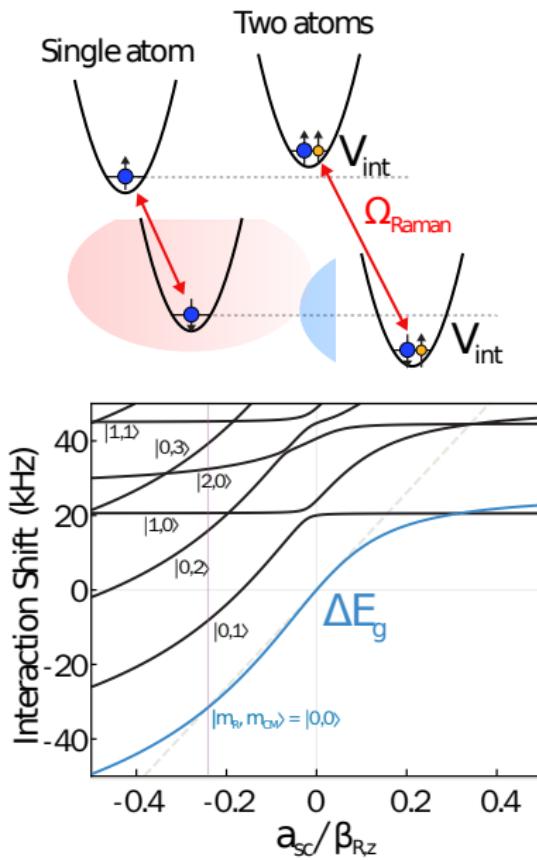
Cs: 96% ground state

Na: 94% ground state

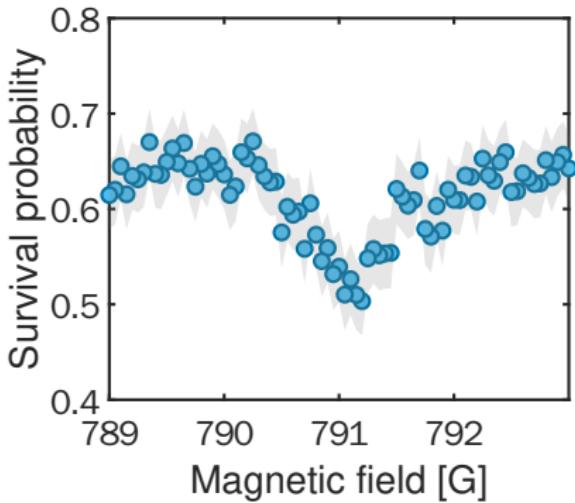
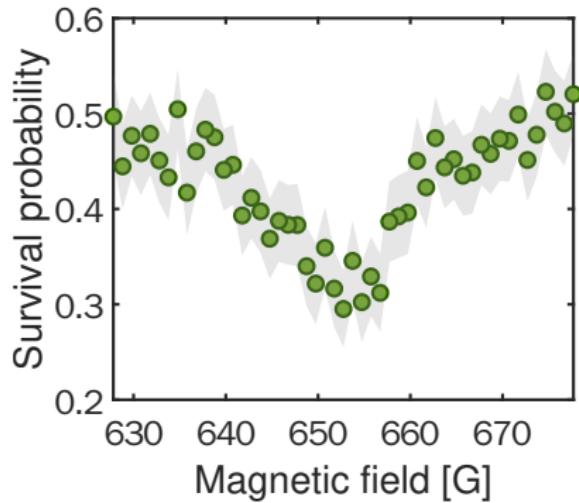
Merging



Interaction shift



Feshbach resonance



Next step

Take advantage of the large scattering length to enhance molecule formation.

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Thank you for your attention.