

Apparatus for making dipolar NaCs molecules

Yichao Yu

Ni Group/Harvard

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Molecules

- Quantum information
 - Quantum simulation
 - Quantum chemistry
 - Precision measurement
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- MOT
 - Trap single atom(s) in an optical dipole trap
 - Raman sideband cooling to ground state
 - Combine two traps with Na and Cs atom
 - Drive STIRAP to molecular state

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- 1 **Current state**
- 2 **Laser system for Sodium**
- 3 **MOT stability**

Current state

- Trapping Cs single atom
- Cs single atom cooling
- Na MOT
- Looking for trapped single Na atom

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Laser system for Sodium

Requirements

- Narrow linewidth
 - Tunable
 - Multiple frequencies / low cost
- Visible diode laser
- Gap between 460-620nm and 1060-1260nm
- 1178nm diode laser (also @ 1156nm)
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- waveguide doubler
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- Modulating the MOT

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