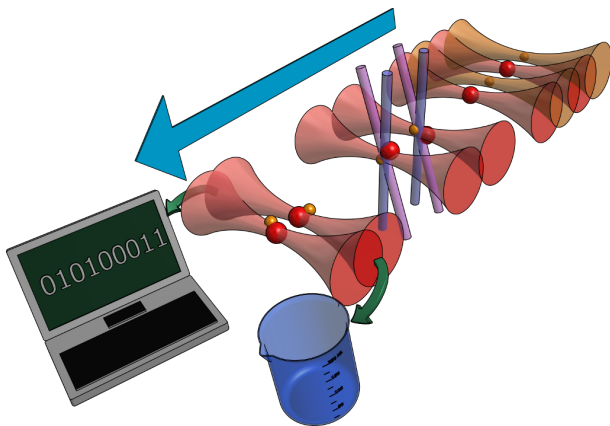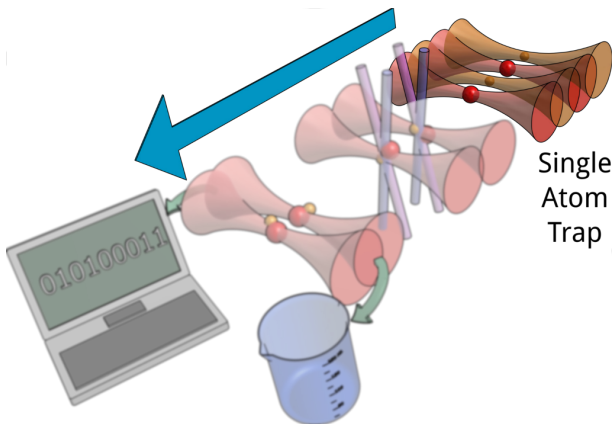# Apparatus for making dipolar NaCs molecules

Yichao Yu
May 3, 2015
Harvard/Ni Group

Apparatus for making dipolar NaCs molecules

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Single
Atom
Trap

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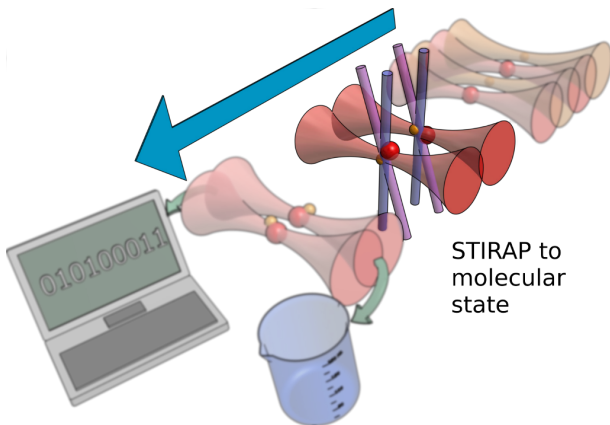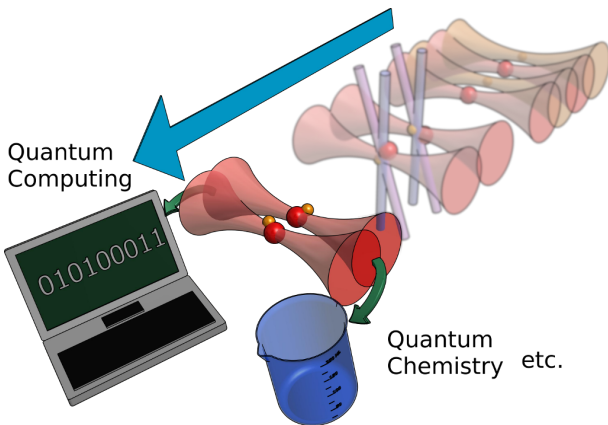
STIRAP to molecular state

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Current state
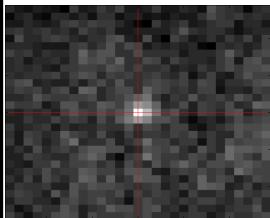
Current state

MOT

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MOT

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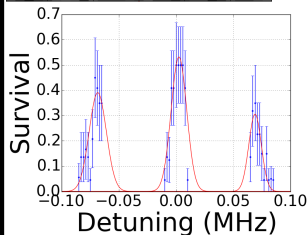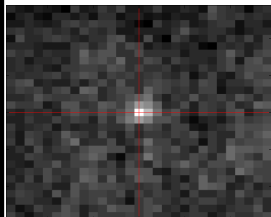## Current state

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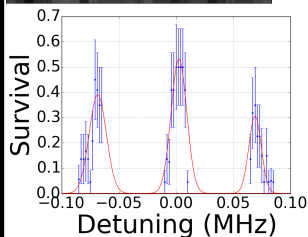
MOT

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Laser system for Sodium

Sodium wavelengths

- D lines $\approx$ 589nm
- D2 line (Cooling, Imaging)
- D1 line (Pumping, Cooling)
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Using diode laser

- Diode laser spectrum
- Power requirement for frequency doubling
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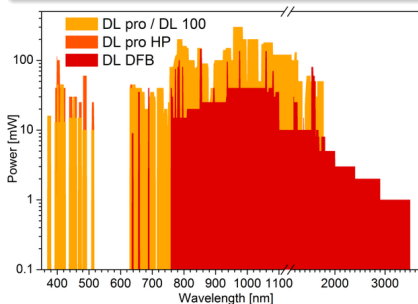- D1 line (Pumping, Cooling)
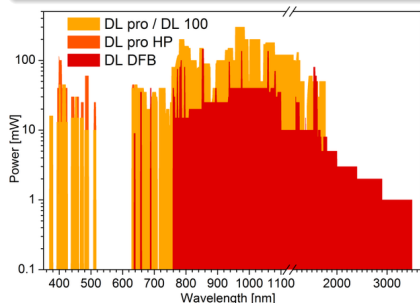- Off resonance (Raman transition)

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$589 \times 2 = 1178$**nm**

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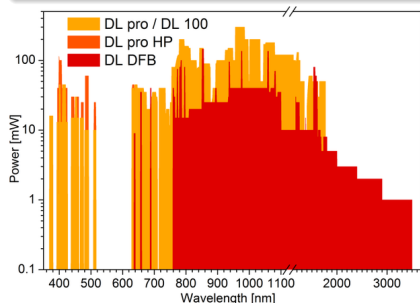- Off resonance (Raman transition)

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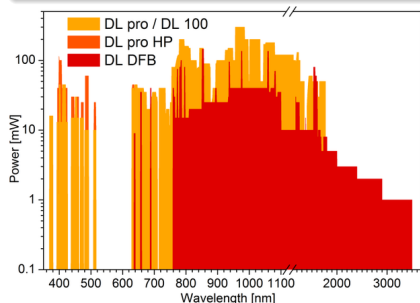- Off resonance (Raman transition)

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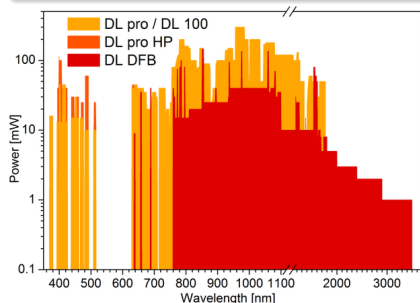- Off resonance (Raman transition)

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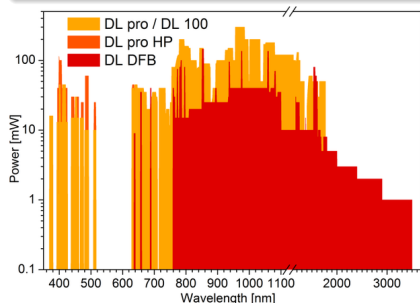- Off resonance (Raman transition)

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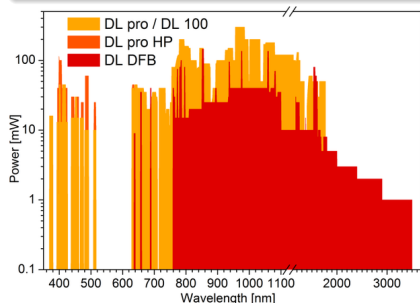- Off resonance (Raman transition)

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- Interference and stability issue with a small MOT
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Members