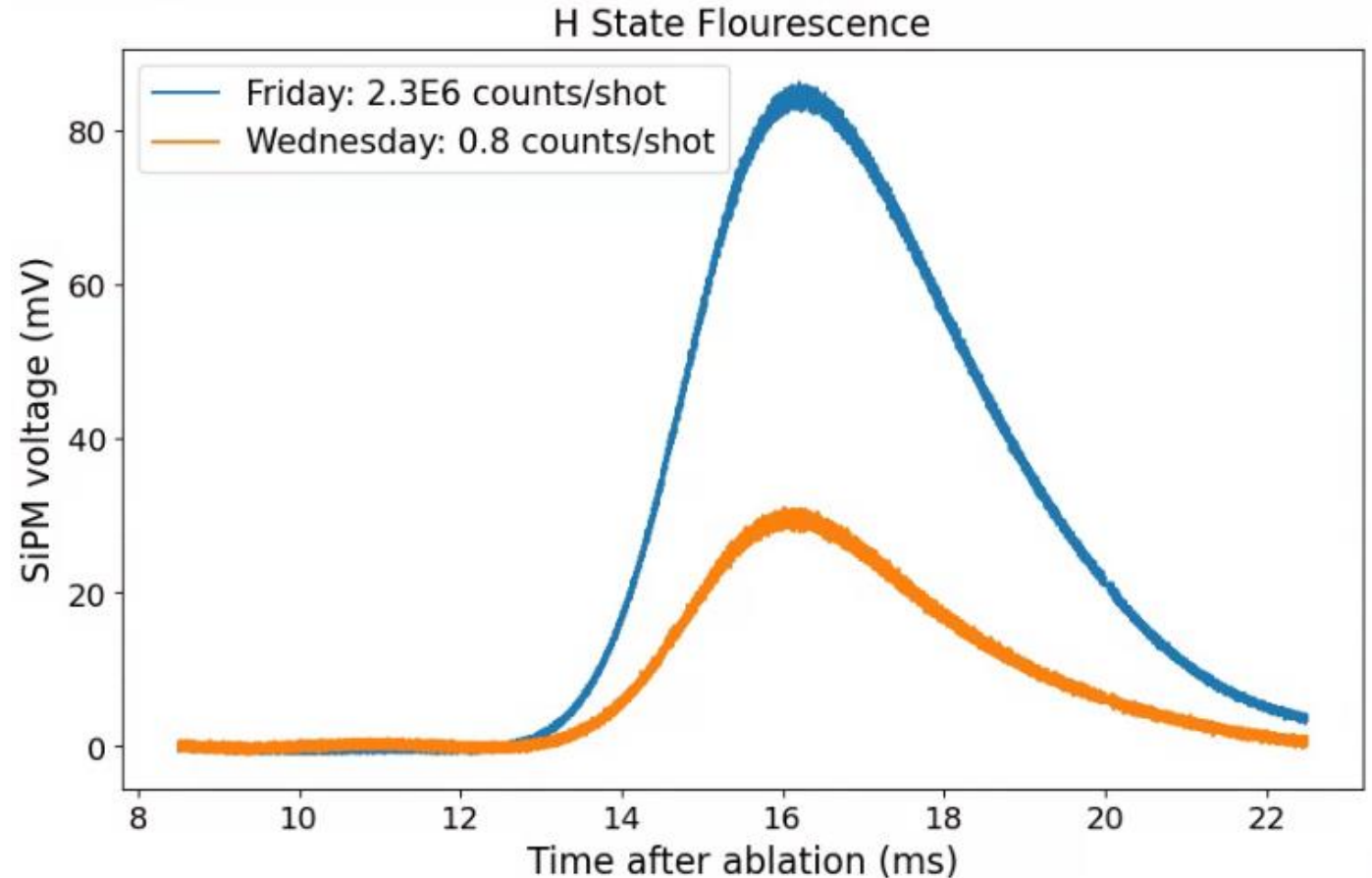


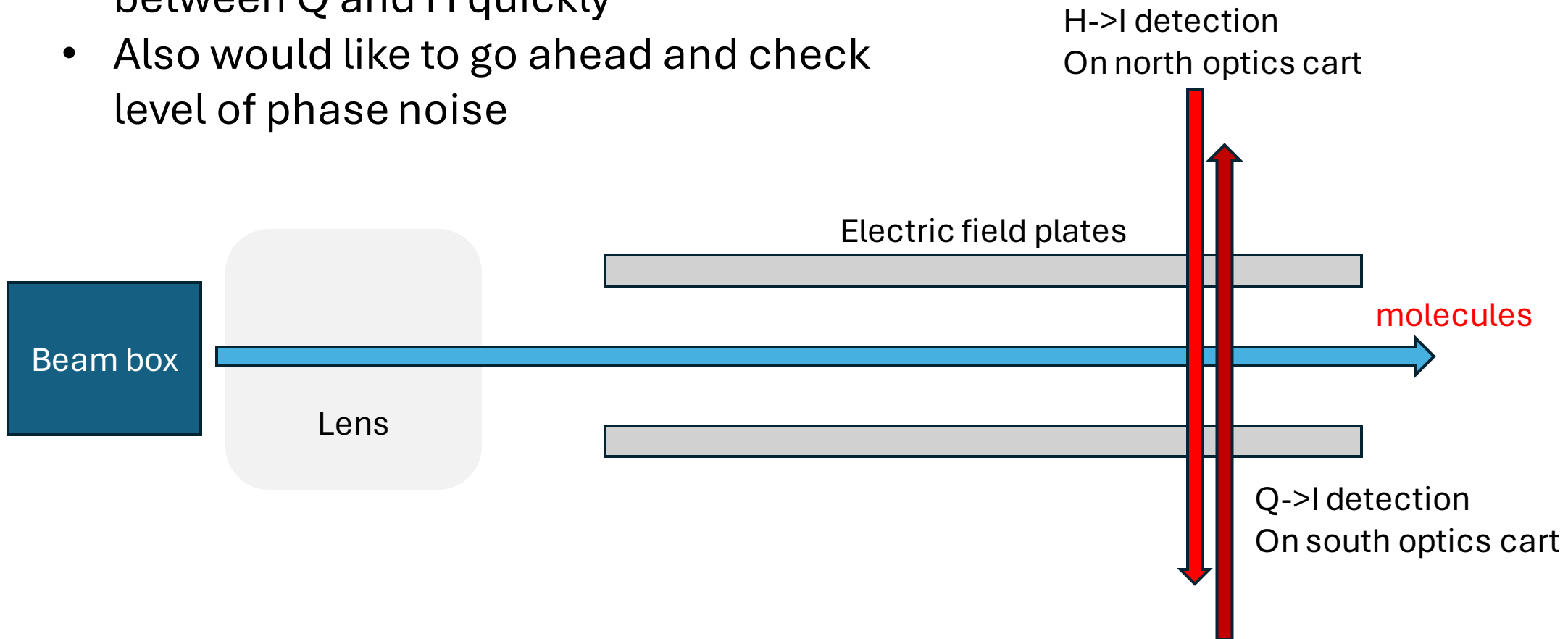
Improved H state by $\sim x3$ since last week

- Two improvements
 - Fixed misalignment in rotational cooling chamber (Zhen)
 - Moved one-photon detuning from 15 MHz to 10 MHz
- Shot noise EDM sensitivity:
 $2.6 \times 10^{-31} \text{ e}\cdot\text{cm}\sqrt{\text{day}}$
- Factor of 15 better than ACME II **daily shot noise limit**



Setting up polarization switching

- To measure transfer efficiencies of each STIRAP, need to be able to switch between Q and H quickly
- Also would like to go ahead and check level of phase noise



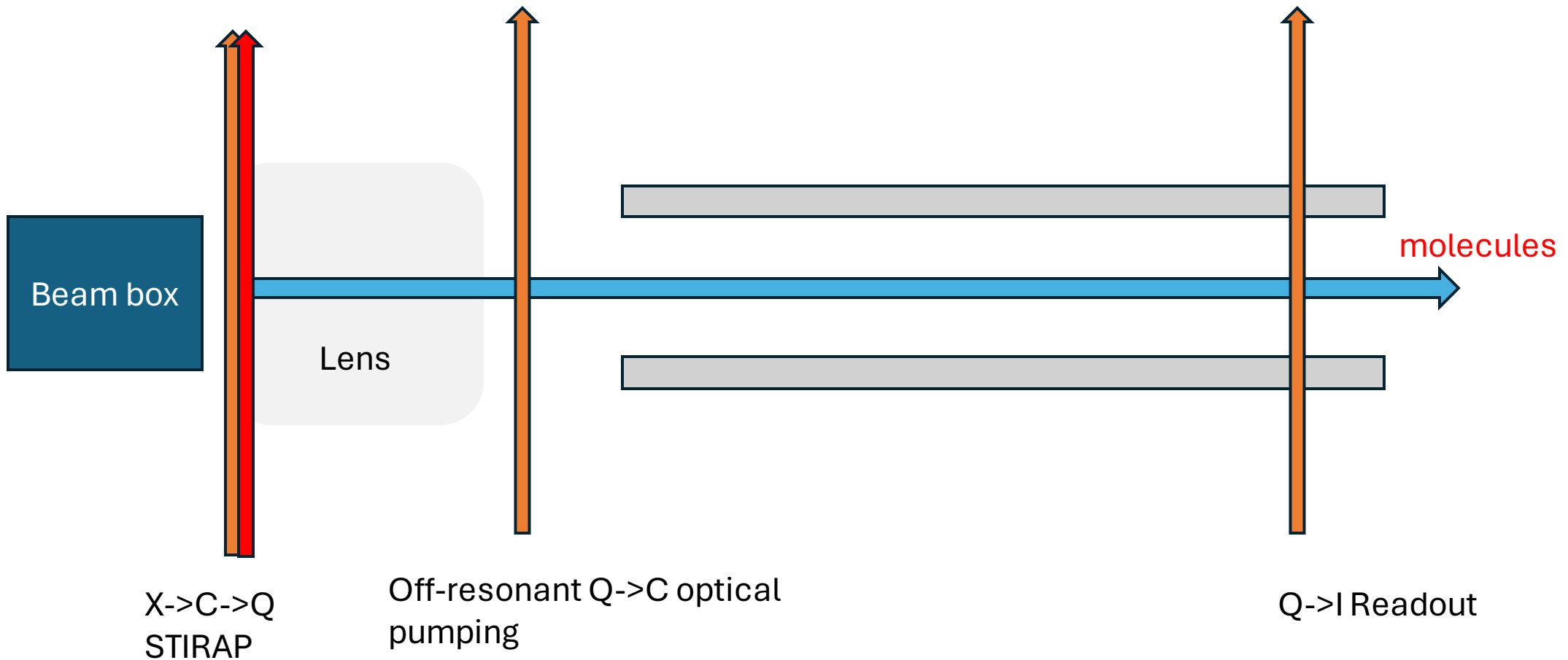
- STIRAP II Transfer Efficiency = $T_{ST}^{II} = q_{depl,OP} \cdot T_{op} \cdot \left(\frac{H_{ST}}{H_{OP}} \right)$

- STIRAP V Transfer Efficiency : $T_{ST}^V = \frac{H_{ST}}{Q \cdot T_{ST}^{II} \cdot e^{-\frac{t}{\tau_H}}}$

- STIRAP I Transfer Efficiency $T_{ST}^I = \frac{Q \cdot T_{ST}^V}{H_{none} \cdot G_{lens}}$

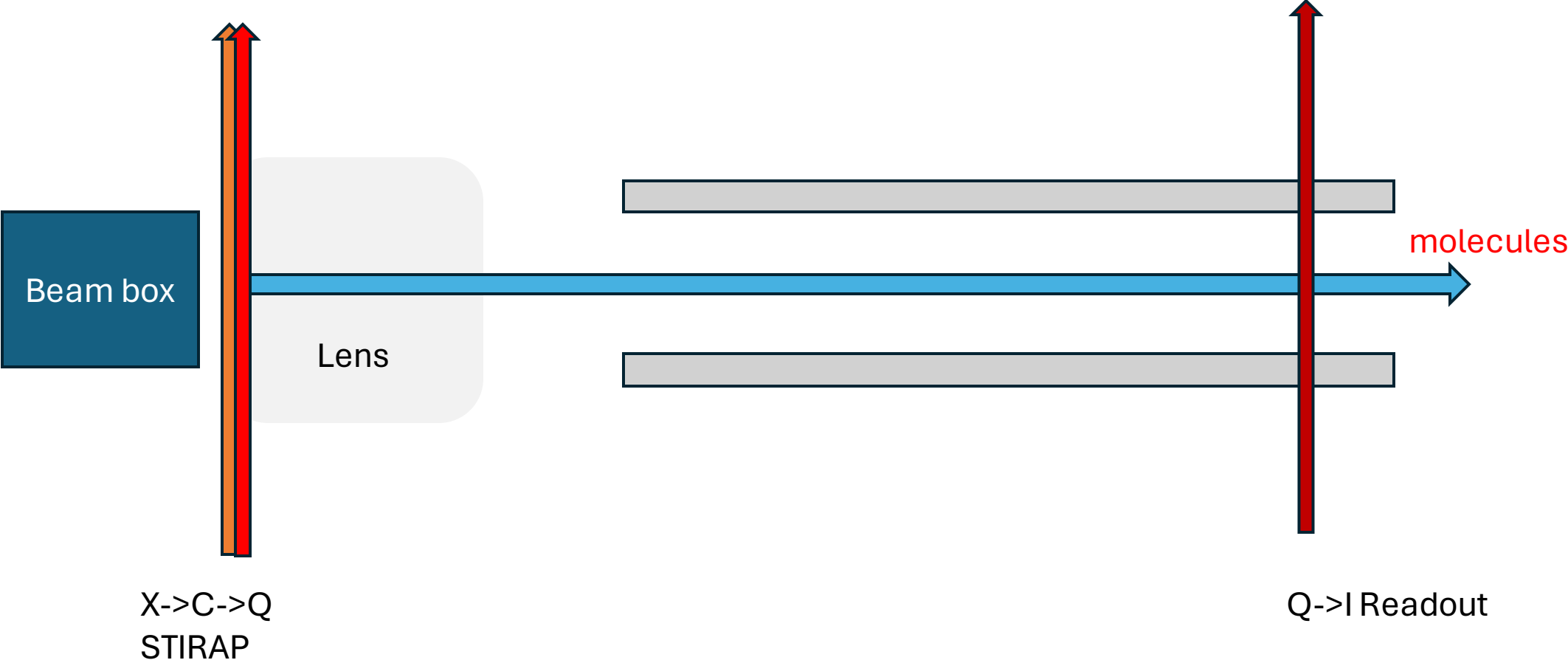
Measure Q state depletion percentage: $q_{\text{depl, OP}}$

Doesn't depend on beam fluctuations

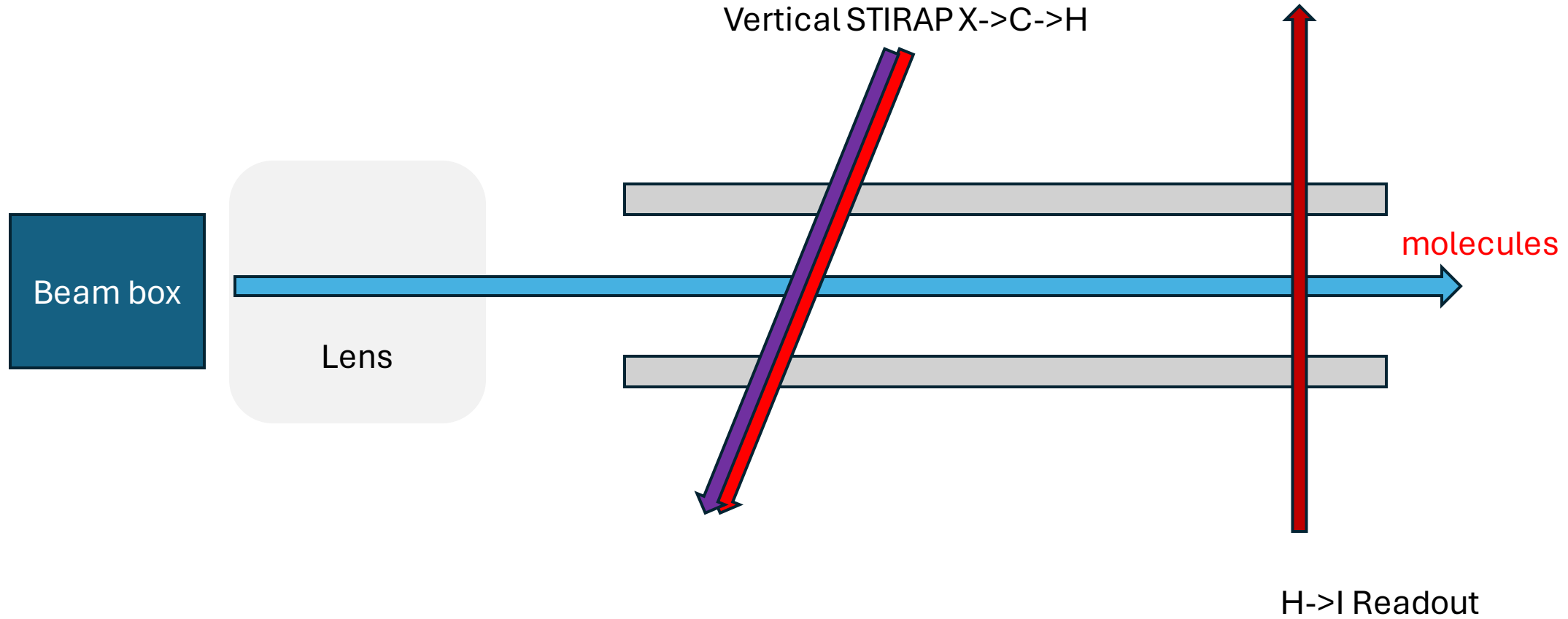


Measure Q state flux: Q

Does depend on beam fluctuations, just find peak spot for comparison



Measure H state flux without first STIRAP: H_{none}



Measure H state flux: H_{ST} and H_{OP}

