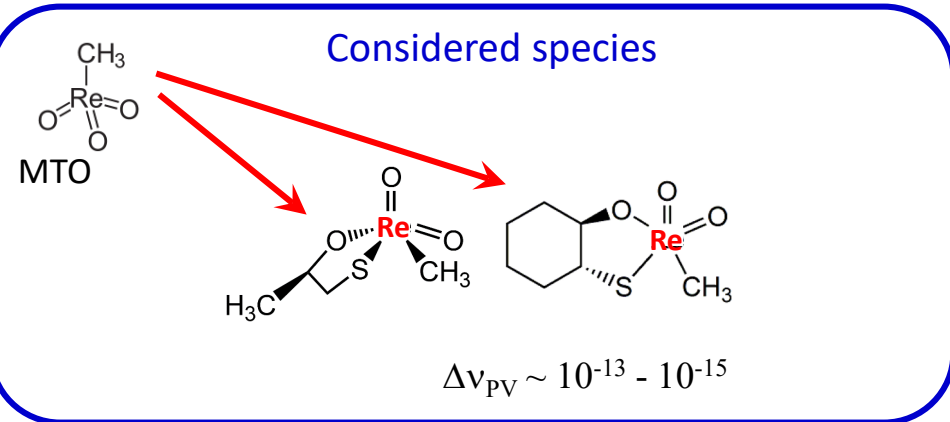


RI07: A new experiment to test parity symmetry in cold chiral molecules using precise mid-infrared spectroscopy

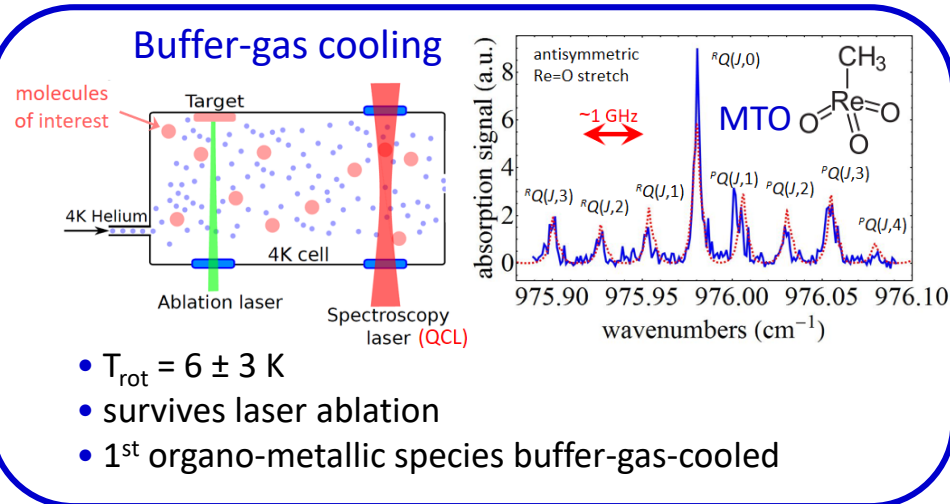
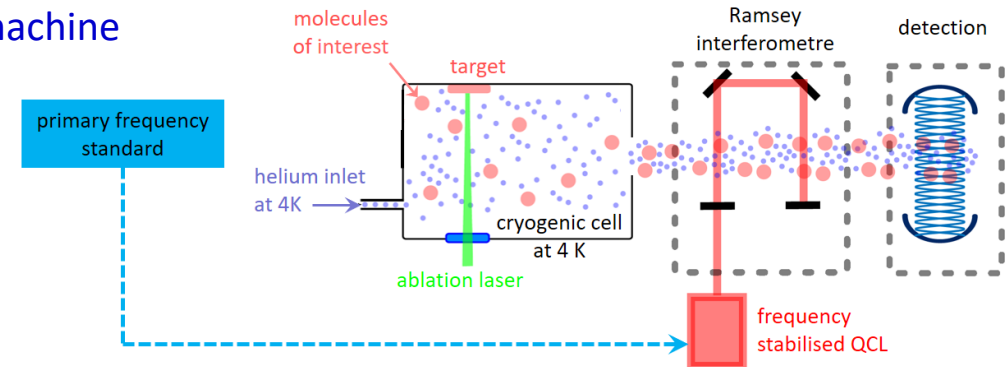
M Manceau, L Lecordier, A Cournol, N Cahuzac, DBA Tran, R Santagata, M Pierens, A Shelkownikov, A Goncharov, O Lopez, A Amy-Klein, SK Tokunaga, B Darquié.

Laboratoire de Physique des Lasers, CNRS-Université Sorbonne Paris Nord

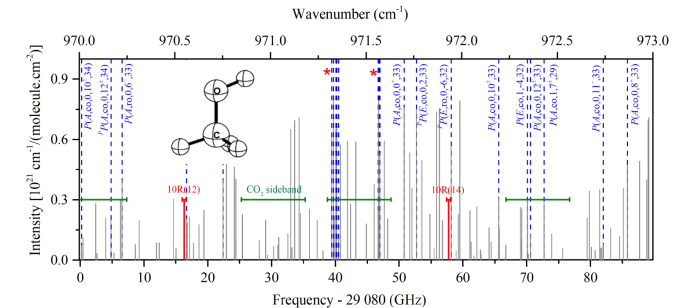
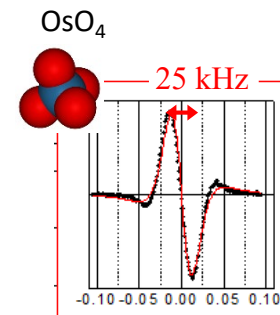
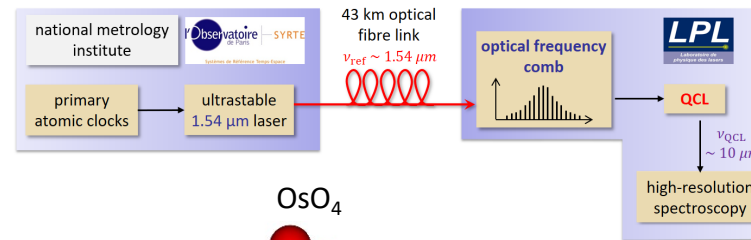


A novel sensitive machine

- buffer-gas-cooled beam
- ultra-stable SI-traceable widely tunable QCL
- Ramsey interferometer
- **<10⁻¹⁵** expected sensitivity



Ultra-precise spectroscopy with QCLs: spectral coverage/tuneability/resolution



- ← 100 GHz →
- $\nu_{QCL} = n/N(\nu_{ref} + \Delta_1) + \Delta_2$
 - narrowest QCL so far: 0.1 Hz
 - saturated absorption spectroscopy
 - few 10 Hz to few kHz uncertainty