Molecules:

Huanqian; Eric Cornell, HfF+:

Dear Prof. Dr. Kirch,

Here is some information regarding the electron EDM project at JILA:

1. Search for an electron EDM using HfF+ ions

2. Contact person: Eric Cornell (JILA), cornell@jila.colorado.edu

3. Collaborating partners: Jun Ye (JILA), Robert Field (MIT)

4. Website: http://jila.colorado.edu/bec/CornellGroup/index.html

5. Link to a recent talk:
http://g2pc1.bu.edu/lept10/EDMCape2010Cornell.pdf
Overall experiment explained in J Mol Spectrosc, 270, pp. 1-25 (2011)

6. Specific features: trapped molecular ions, 3Delta1 state, rotating electric and magnetic fields

7. Major challenges: efficient state readout, state preparation, electronic spectroscopy of HfF+

8. Schedule, aimed at sensitivity and timeline for results:
Aimed at sensitivity: ~10^{-29} e-cm

Current status (see also attached slide): prepared 300 HfF+ in a single rovibronic, magnetic sublevel of the 1Sigma ground state; trapped HfF+; achieved in-trap state readout of HfF+ with laser-induced fluorescence; mapped out HfF+ levels up to 15000 cm^{-1}

End of 2012: population transfer of ions to 3Delta1 End of 2013: initial measurement of coherence times with electron spin resonance technique

Thank you,
Huanqian

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