Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **3525** Type: **Invited Speaker / Conférencier(ère) invité(e)**

(I) Probing a Structural Phase Transition of Trapped Ions in the Quantum Regime

Tuesday, 7 June 2022 10:45 (30 minutes)

We experimentally characterize the 1D linear to 2D zigzag structural transition for arrays of ions confined in a linear Paul trap and cooled to near their ground state of motion. Raman sideband spectroscopy is used as a probe to reveal both the energy level structure and the motional population distribution of the ion crystal near the critical point. The nature of the transition will be discussed, prospects for coherence assessment near the critical point as well as potential applications in in-situ sensing of electric field noise.

Primary author: HALJAN, Paul C (Simon Fraser University Physics)

Presenter: HALJAN, Paul C (Simon Fraser University Physics)

Session Classification: T2-8 Precision Techniques in Spectroscopy (DAMOPC) | Techniques de précision en spectroscopie (DPAMPC)

Track Classification: Symposia Day (Tues. June 7) / Journée de symposiums (mardi, le 7 juin): Symposia Day (DAMOPC/DTP) - Precision Techniques in Spectroscopy