



Canadian Association  
of Physicists

Association canadienne  
des physiciens et physiciennes

Contribution ID: 4078

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

## Quantum State Engineering using collective spin excitations

*Tuesday 20 June 2023 14:35 (15 minutes)*

Coherent scattering of photons in a dilute vapour of alkali atoms provides a strong link between the quantum information stored in the photonic and collective spin Hilbert spaces. In our lab we are looking at the mapping of photonic quantum states into and out of collective spins. By continuously scattering, we are creating highly correlated beams exhibiting EPR entanglement as well as quadrature and intensity squeezing below the standard quantum limit.

### Keyword-3

### Keyword-2

technology

### Keyword-1

quantum

**Primary author:** MACRAE, Andrew (University of Victoria)

**Presenter:** MACRAE, Andrew (University of Victoria)

**Session Classification:** (DPE/CAP) T3-8 Q-STATE: Quantum Science, Technology, Applications, Training, and Education | Science, technologie, applications, formation et éducation quantiques (DEP/ACP)