## 24th Australian Institute of Physics Congress



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## Towards an experimental violation of a motional-state Bell's inequality using ultracold helium

Monday 12 December 2022 11:45 (15 minutes)

We present our experimental progress towards demonstrating quantum non-locality in a matter wave system of ultracold helium via a Rarity-Tapster interferometer. The momentum entangled state used for the violation is generated by colliding helium Bose-Einstein condensates.

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