



Contribution ID: 1262  
compétition)

Type: **Poster (Student, In Competition) / Affiche (Étudiant(e), inscrit à la**

## **Scalar fields in a shell: the response of an Unruh-Dewitt detector inside, and what it means for us outside**

*Tuesday, 14 June 2016 19:04 (2 minutes)*

We show that a particle detector can distinguish the interior of a hollow shell from at space for switching times much shorter than the light-crossing time of the shell, even though the local metrics are indistinguishable. This shows that a particle detector can read out information about the non-local structure of spacetime even when switched on for scales much shorter than the characteristic scale of the non-locality.

**Primary author:** NG, Keith (University of Waterloo)

**Co-authors:** MARTIN-MARTINEZ, Eduardo (Institute for Quantum Computing (University of Waterloo) and Perimeter Institute for Theoretical Physics); MANN, Robert (University of Waterloo); Dr LIN, Shih-Yuin (National Center for Theoretical Sciences)

**Presenter:** NG, Keith (University of Waterloo)

**Session Classification:** DTP Poster Session with beer / Session d'affiches, avec bière DPT

**Track Classification:** Theoretical Physics / Physique théorique (DTP-DPT)