



Contribution ID: 84

Type: **Contributed Oral**

(Mis)applying the Heisenberg uncertainty relations to the hydrogen atom

Thursday 4 December 2025 11:10 (15 minutes)

As has been recently pointed out by Pagnoni *et al.* [[1]], care is required in applying the Heisenberg uncertainty relations. This care has sometimes been insufficiently realised in pedagogical settings. A case in point is the hydrogen atom. Here the singularity of the Coulomb potential causes difficulties in utilising the uncertainty relations. Clarification of this point is expected to improve both the learning and teaching of physics.

[[1]] K. F. Pagnoni, A. Bruno Alfonso and R. A. Lewis, *Eur. J. Phys.* **46** (2025) 045404. doi.org/10.1088/1361-6404/addfbf

Authors: PAGNONI, Karen; BRUNO-ALFONSO, Alexys; LEWIS, Roger

Presenter: LEWIS, Roger

Session Classification: Physics Education

Track Classification: Topical Groups: Physics Education