

Corrections

The Quantum Menagerie

A Tutorial Introduction to the Mathematics of Quantum Mechanics

This is a list of corrections to the book: [The Quantum Menagerie](#)
by James V Stone, 2020.

Please email corrections to j.v.stone@sheffield.ac.uk

p20 Clarification. On p19, I say that the average kinetic energy of a standing wave is $kB/2$, which is true, but the average **total** energy is kB . A nice example of this truth is a pendulum. So "average energy" on p20 actually refers to the average total energy.

16th Feb 2021. *Thanks to R.Bharath for spotting this ambiguity.*

29th December 2020: Minor tweaks.

Uploaded new version (still labelled as first printing):

p73. Replaced Figure 5.4a with improved 3D rendered figure.

p74. Replaced anti-clockwise spiral with clockwise spiral.

Second printing. Published November 2022.

p67 (paragraph 3). "each electron have a" -> "each electron **has a**"
21 Dec 2021.

p78. Figure 5.7. The angle labelled as ϕ in the centre (on the dashed line x) should be labelled as "approximate equal to ϕ ". *Thanks to Alistair Bray.*
16 Oct 2022.

p99. Second paragraph, TDSE should be TISE. Thanks to Alistair Bray.
16 October 2022.

p119. "speed multiplied by mass", should be: "velocity multiplied by mass".
18th Feb 2021.

Third printing (Not published yet).

The joke in the Preface ignores the fact that it is momentum, not just speed, that matters for Heisenberg's uncertainty principle. So the correct version is (correction in bold):

Heisenberg and Schroedinger are driving **due West** when they get pulled over.

The policeman asks Heisenberg,

"Do you know how fast you were going?",

"I have no idea," says Heisenberg, "but I do know exactly where we are."

"Never mind all that, you were speeding, at precisely 66.26 miles per hour."

Heisenberg throws his hands up in despair,

"Great! Now we are completely lost."

Worried that this bizarre reaction might be due to drugs, the policeman decides he had better check the trunk.

"Hey, do you know there's a dead cat back here?".

"We do now!" says Schroedinger, shaking his head.

