

# Re: Repeatability, scientific method, and probabilistic results

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Tim Golden wrote:

> Is there a conflict with probabilistic models and the scientific  
> method?

No.

> Whereas a simple experiment allows for errors in the equipment and  
> allows for probabilistic correction, quantum physics imposes these  
> methods on the non-instrumental portion of the experiment.

Outcomes of experiments are predicted to follow certain probability distributions. This is a testable hypothesis and is repeatable.

> Repeatability is a tenet of the scientific method.  
> Some will argue that the quantum experiments are repeatable.

Indeed.

Consider spectral emission lines. These have finite width due to the uncertainty principle. Does that mean you can't test hydrogen lines against the theory of where they should be? Of course not.

There's no more problem with this than with hypothesis testing of any kind where outcomes are probabilistic. And as you point out, the outcomes of all experiments, even macroscopic ones, are probabilistic.

So where's the problem?

– Randy

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Re: Repeatability, scientific method, and probabilistic results

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