

## Re: Computability in principle

**Source:** <http://coding.derkeiler.com/Archive/Lisp/comp.lang.lisp/2003-11/0626.html>

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["Followup-To:" header set to comp.lang.functional.]

On 2003-11-05, Anton van Straaten <[anton@appsolutions.com](mailto:anton@appsolutions.com)> wrote:

> *Markus Mottl wrote:*

>> *In comp.lang.functional Erann Gat <[gat@jpl.nasa.gov](mailto:gat@jpl.nasa.gov)> wrote:*

>>> *It is not yet clear whether quantum computation can really be made to*

>>> *work. It may be that the practical difficulty of keeping  $N$  qbits*

> *mutually*

>>> *entangled grows exponentially with  $N$ , in which case the same argument*

> *may*

>>> *well apply.*

>>

>> *Indeed, I also fear that your argument might turn out to be true in*

>> *practice. But well, as long as there is no evidence against large-scale*

>> *quantum computers, I'll retain some healthy optimism :-)*

>

> *My suspicion is that quantum computers will indeed turn out to be*

> *miraculous, with one minor drawback: when they produce a correct answer, it*

> *will not necessarily appear in the same universe in which the question was*

> *asked...*

Thinking of quantum computers as "harnessing the powers of multiple universes" is not a fruitful way to think of their speed-ups over classical computers.

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Aaron Denney

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