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- ~8000 submissions per month
- Well-established communities

arXiv.org

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- Well-established communities
- How do you know which papers to read?

Traditional solutions

Traditional solutions

- Peer reviewed journals

Traditional solutions

- ~~Peer reviewed journals~~ slow and opaque
- Citations

Traditional solutions

- ~~Peer reviewed journals~~ slow and opaque
- ~~Citations~~ even slower
- Can we do better?

Online social systems are very good at filtering and annotating information[1]

1. Michael Nielsen, *Reinventing Discovery: The New Era of Networked Science*

Social networks

- Facebook/Reddit/etc

Value to society is… questionable.

Social networks

- ~~Facebook/Reddit/etc~~ 

- StackExchange!

  StackOverflow, MathOverflow, etc

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Structural Quantification of Entanglement

Scite! 2 PDF

F. Shahandeh, J. Sperling, W. Vogel

Jul 18 2014 quant-ph arXiv:1407.4589v1

We introduce an approach which allows a detailed structural and quantitative analysis of multipartite entanglement. The sets of states with different structures are convex and nested. Hence, they can be distinguished from each other using appropriate measurable witnesses. We derive equations for the construction of optimal witnesses and discuss general properties arising from our approach. As an example, we formulate witnesses for a 4-cluster state and perform a full quantitative analysis of the entanglement structure in the presence of noise and losses. The strength of the method in multimode continuous variable systems is also demonstrated by considering a dephased GHZ-type state.

On the Second Law of Thermodynamics: The Significance of Coarse-Graining and the Role of Decoherence

Scite! 1 PDF

Mahdiyar Noorbala

Jul 18 2014 gr-qc hep-th quant-ph arXiv:1407.4792v1

We take up the question why the initial entropy in the universe was small, in the context of evolution of the entropy of a classical system. We note that coarse-graining is a an important aspect of entropy evaluation which can reverse the direction of the increase in entropy, i.e., the direction of thermodynamic arrow of time. Then we investigate the role of decoherence in the selection of coarse-graining and explain how to compute entropy for a decohered classical system. Finally, we argue that the requirement of low initial entropy imposes constraints on the decoherence process.

How do you use it?

The home feed

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- Click to scite a paper
- When enough people scite, the order changes

On the Second Law of Thermodynamics: The Significance of Coarse-Graining and the Role of Decoherence

Scited 3 PDF

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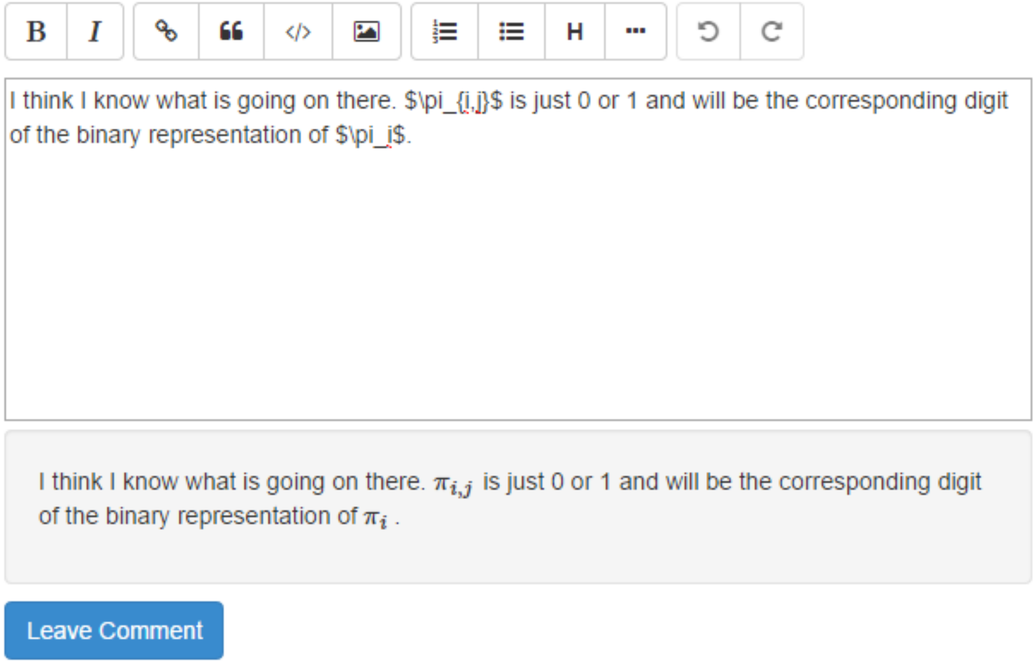

How do you use it?

Commenting

- Supports Markdown and a subset of LaTeX
- Previews as you type
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Aram Harrow about 6 hours ago (1 points)

I guess the reason why people use $\mathbb{C}\mathbb{C}$ instead of $\mathbb{Z}_2\mathbb{Z}_2$ is because this is what comes from the Schrodinger equation. The reason why counting function evaluations is considered a plausible measure of complexity is that if you have a way of computing a function using X oracle calls and Y gates, and each "oracle call" can be implemented by a subroutine using Z gates (e.g. consider trying to break AES), then the function can be computed using $XZ + YXZ + Y$ gates. In other words, it's based on what we can do efficiently on a quantum computer (assuming we can build one), not on some sort of generalization of classical computing that is justified on *a priori* grounds. For this reason, the title of this paper seems to, at best, be addressing a straw man.

permalink report reply

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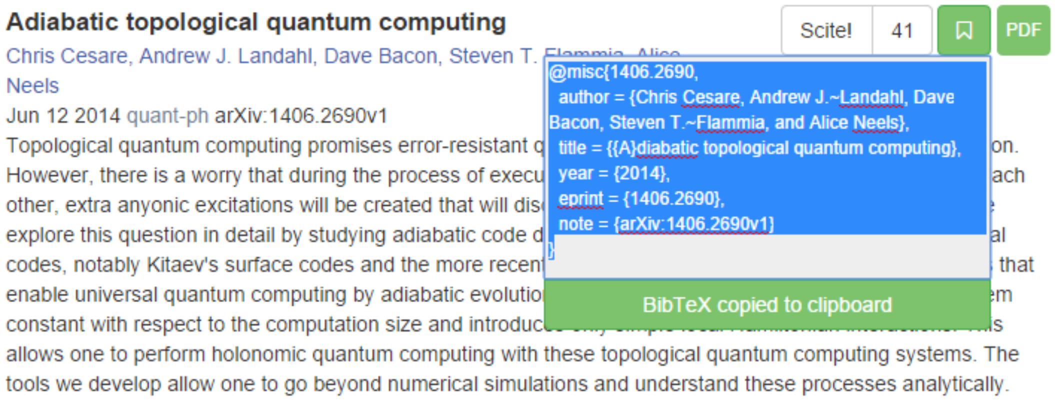

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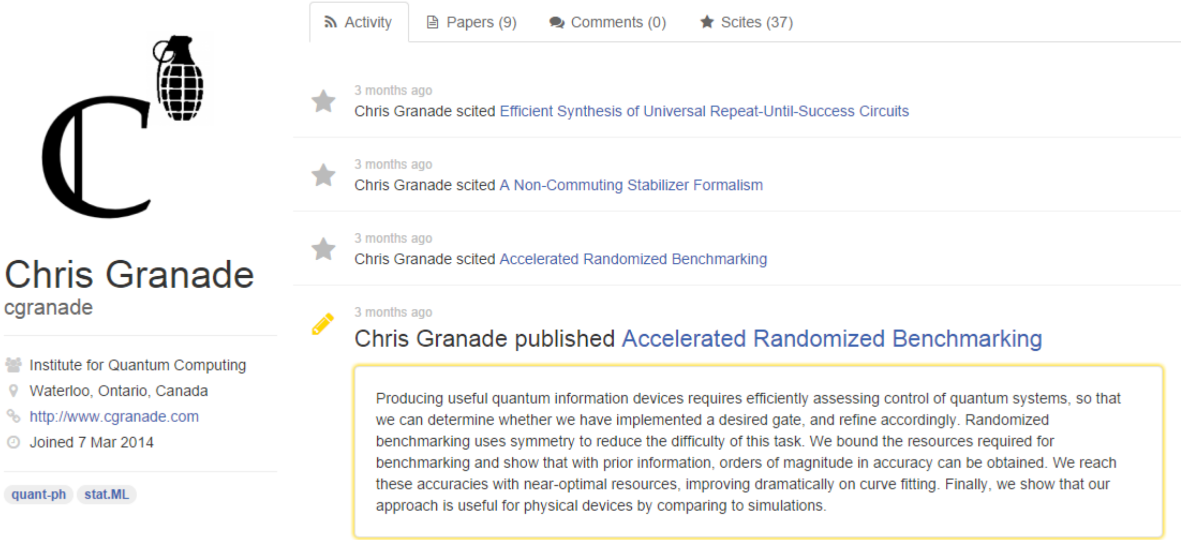

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Bend-Bounded Path Intersection Graphs: Sausages, Noodles, and Waffles on a Grill

Scited 1 PDF

Steven Chaplick, Vít Jelínek, Jan Kratochvíl, Tomáš Vyskočil

Jun 25 2012 cs.CG cs.DM math.CO arXiv:1206.5159v1

In this paper we study properties of intersection graphs of k-bend paths in the rectangular grid. A k-bend path is a path with at most k 90 degree turns. The class of graphs representable by intersections of k-bend paths is denoted by B_k-VPG. We show here that for every fixed k, B_k-VPG is a proper subset of B_k+1-VPG and that recognition of graphs from B_k-VPG is NP-complete even when the input graph is given by a B_k+1-VPG representation. We also show that the class B_k-VPG (for k>0) is in no inclusion relation with the class of intersection graphs of straight line segments in the plane.

TQC 2014

A quantum computing conference decided to post all of their peer review as public SciRate comments.

This is pretty exciting!

TQC 2014 Program Committee 2 months ago

Reviewer 1

The paper investigates a generalization of the notion of quantum colorings, and their associated nonlocal games, to graph homomorphisms.

A homomorphism from a graph X to a graph Y is a mapping f from the vertices of X to the vertices of Y that preserves edge relations: if $\{x, y\}$ is an edge of X, then $\{f(x), f(y)\}$ must be an edge of Y. (If $\{x, y\}$ is not an edge of X, then no restriction is placed on $\{f(x), f(y)\}$. It could, for instance, be that $f(x) = f(y)$ in such a case.) The statement that a graph X is m-colorable is, in particular, equivalent to the existence of a homomorphism from X to K_m, the complete graph on m vertices.

Ideas

Ideas

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Ideas

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