

SIX REPORTERS HAVE THREE HOURS TO FIND OUT WHERE THEY ARE, AND WHAT IS GOING ON. USING YOUR RELIABLE INFORMATION AND A HAND CRANKED DUPLICATOR THEY PRODUCE A PAPER WITH THE REAL NEWS: THE DAILY ISSUE.



EDITION 61 - 22/1/2014

## FOM PHYSICS



### QUANTUM-COMPOTE

▼  
Here's a trick you can only learn at a physics conference. A man walks into a bar orders a gin and tonic and demands to be fractionally charged, causing quantum puzzlement in the bartender. This man can get a practically infinite supply of gin and tonics with this simple trick, outdoing Jesus himself in the feat of doubling the bread and wine but with infinitely more fashionable drinks.

Jay D. Sau from Maryland University has no such tricks up his sleeve for he is a busy man with a clear goal: To study the states of topological degeneracy of Majorana Fermions, cousins apparently of the slightly less elusive Dirac Fermions. Perhaps the elusiveness of Majorana particles is somehow related to the man that conjectured them, a man that after much toil decided to get into a boat and sailed into the horizon never to be seen again. Who can blame him?

From this talk we also learned that degeneracy ought to be locally protected. As the city council of Austin, Texas knows all too well, promoting bums, phased-out hip-

pies, hysterical performance artists, crypto-currency-hoarding drug dealers and die-tie t-shirt makers under the banner of "Keep Austin Weird", has turned out to be a successful strategy to attract tourism and Tor hidden services. That same strategy of "locally protected degeneracy" can result in just the right conditions for a robust qubit to just be, like Wally, indistinguishable in a crowd.



supercool particles.

### PROVING EFIMOV

▼  
"I cool and trap atoms! Hari (27) is working in the booming field of the Efimov states at the VU Amsterdam. Efimov, a Russian physicist, calculated in the seventies that three particles, under certain circumstances, can stay together fore-

ver. It is not as if they are glued together, the three particles can feel each others presence, without being physically bound. But Efimovs theory was never experimentally proven. Remy (25), a colleague of Hari, explains how you could validate Efimovs idea. "Normally, you can trap particles, but when they are together in groups of three, you can't catch them." During the experiment you can detect this as a loss. In Innsbruck, researchers managed to show some of these losses. But they didn't succeed to gather all the data which is needed to prove the theory of Efimov. At the VU Amsterdam, Hari also takes a shot. He works with a mixture of helium and rubidium. Helium weighs almost nothing, where rubidium is heavy. This makes it easier to detect the losses. Hari hopes that with this supercool mixture, he can show that Efimov was right.

### TECHNOLOGICAL HERITAGE

▼  
Some Remarks on the Production Process of this Journal.

The text in this journal is first written on lined A5 paper using a BIC 207 ballpoint. The pictures are

made with a 2B carbon core pencil.

The text is processed on 1996 Toshiba SatellitePro 430 CDT laptops running Debian 3.0 Woody. The pictures are scanned, and edited in a custom made Desktop Publishing Program on a Raspberry Pi.

Next the "stencil" is prepared via a copying process that produces the nice ozone smell that is hanging around our press-room.

Finally, the issues are printed on a 1975 state of the art Gestetner E45 mimeograph.

In the mimeograph process, an oil based ink is pressed through the stencil by a rotating drum, directly onto the paper. To get a two sided print, the paper has to be dried sufficiently between prints, and can then be flipped to print the back side.

The number of papers printed is about 1500. The printing process takes roughly an hour. Using this process, we manage to print two papers a day.

Anybody who is interested in this process: Don't hesitate to ask, or cooperate.

## SCIENCE FICTION

▼  
FOM's office employees don't need a PhD in physics. Mirjam (49) reveals that actually not even a bachelor degree in physics is required for the job. She likes science fiction though, and finds it all over the place. "All these 'nano tiny thingies' are not too far from borgs, are they?" And talks about relativity make her dream away in warp speed time travel.



"All these nano tiny thingies."

## BREAKING: POSTDOCS NANOFOTONICS BEST DANCERS

▼  
The Daily Issue, your reliable newspaper, did a broad and representative research on the party of last night. We interrogated two male subjects who want to stay anonymous. One researches nanofotonics and the other one is active in surface science. Their answers are breathtaking. The first guy knows that the postdocs in nanofotonics are the best dancers within the whole of physics, the other one states that surface scientists are the best drinkers.

If you want to challenge our findings, visit our editorial office and show us you're a better dancer or drinker than our subjects.

## CLOSE PACKING OF CUPS

▼  
Are the cups at the coffee desks stacked especially in a regular grid for this conference? Waitress Denise (20) has no idea. "This is my first day in the job". Sjan (52) explains it is the most efficient way to pack as many cups possible. This cries for a

critical analysis by the scientists in the hall. Here's the challenge: No more than 5 cups may be stacked on top of each other, and the occupied surface may not exceed the surface covered by a 5 by 5 rectangular grid of saucers.

A quick poll yields roughly 3 categories of answers.

a) My gut feeling says this is well done, it cannot be done more efficiently.

b) A hexagonal grid will make better use of the unused space in between.

c) Separate cups and saucers at the cost of a less efficient serving process.

Yaroslav (28) cuts the discussion short: "What a ridiculous question."

## ANNOUNCEMENT

▼  
At 13h30 a lecture organized by the NNV starts in the Baroniezaal. It's about physics in and with China and India. In short: In the future won't come to Europe anymore, Europeans will go to Asia.

## COLOFON

▼  
The Daily Issue is written and printed on the spot by a varying board of editors. This issue was made by: Danibal, Diana Wildschut, Dick Bos, Harmen Zijp, Lemke Kraan, Luis Fernandez, Patrick Nederkoorn and Peter Uithoven.

[www.spullenmannen.nl](http://www.spullenmannen.nl)