

Dechlorinating the Moderator

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A perspective on Particulate 7: HiNRG & B-OND

Venue: Maastricht Hilton Travelodge International Hotel, 30 March - 2 April 2018

Yr hmbl crrspndnt rprts:

This was the seventh and biggest Particulate. It's fair to say that these cons have come of age; with about seven hundred guests and maybe three- hundred walk-ins on the door there's no longer any question that the concom can make ends meet. Indeed they're already hard at work scoping out a venue for Particulate #8.

I checked in on Friday morning to find that about a hundred die-hard geeks had hit the con the night before, and the registration desk's bookings system was toast. The hotel has hosted the last two Particulates, and they knew what to expect; as I arrived two bemused porters were helping a spotty youth hump weird-shaped bits of gear crusted in radiation trefoils into the baggage lifts. Everyone had to pass a check at a discreet security booth by the door, to prevent any recurrence of the regrettable incident that nearly wrecked last year's con.

The first thing I noticed in reception was a big whiteboard beside the main lifts. Various messages were scribbled on it, but right in the middle, written in big blue letters, was a notice:

DONT TRY CRITICALITY EXPERIMENTS IN YOUR BEDROOM -- UNLESS YOU WANT TO TEST THE SPRINKLERS.
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I started by checking out the cafe, which was blue with dope fumes by the time I arrived and which got steadily worse until the end of the con (when the Bremsstrahlung Regressives tried to use it as a cloud chamber). The usual suspects were there, sipping capuccino and smoking like there was no tomorrow. And lo, who should I run into at the bar but my old acquaintance, Doktor Strangelove?

I first met the Dok back at Criticality II (though I'd run across him before on the net). That was back when his home town (Buttfahrk, Ontario) was trying to prosecute him for attempting to assemble a fissile device within city limits -- of which charge, incidentally, he was found not guilty -- and it struck me as unusually harsh that a local prosecutor was calling for a twenty-four year sentence on a guy who was still, basically, a kid. Since then the Dok has done some growing up, and I can safely say that if he wasn't a menace to society then, he certainly is now. Or he'd like to think he was.

Dok:

Hiya Betsy, howzit going?

Me:

Oh, I dunno. Just got here, dumped my bags, thought I'd take a sniff of the breeze.

Dok:

Huh-huh-huh.

Me:

Anything cool going?

Dok: [pushes glasses up bridge of nose, fidgets with head-up projector on left spectacle frame]:

I guess it depends what splices your code. The Fabulous Rubensteins say they're gonna do something weird tomorrow lunchtime during the birds-of-a-feather on fusion experiments, and like Sunday morning word is that Pion Overdrive are building a long column down the banquet hall and coopting some heavy control bandwidth. Should be fireworks, maybe some stray neutron soup boiling off of that if they kick it into the fifty TeV range. And there's some dude from CERN knocking around to give a talk on law'n'order and basement nucleonics. He's kind of weird, but I don't think he's stasi.

Me:

What's with the fusion gig?

Dok: [raises eyebrow suspiciously]:
mean you haven't heard?

Me: [hastily]:

well, there've been rumours about a breakthrough in self-criticalizing muon-catalysis reactions ...

Dok: [playing hard to get]:
that remains to be seen. Buy me a drink?

Me:

I thought you were ...

Dok:

Minimum drinking age is 21 here.

Me:

Okay.

That's the way it is. The nerds are on parade. They've always been paranoid about the way outsiders see them. First it was SF fans. Then computer hackers and phone phreaks. These days it's extropians, roboticists, and hard physics geeks. But the character type is the same: very bright, highly strung, defensive about their hobby, competitive within their field. They realize it's not something the rest of society understands or cares much about, but they care and that's what makes the difference.

I staggered out of the cafe with my lungs on fire and my eyes streaming and headed for the swimming pool. The swimming pool is a really good place to hang out at a Particulate gig, but it's not worth bringing your swimsuit: it's where the re-enactment crowd get together. A bunch of kids in sarongs and TELLER IS GOD t-shirts were pouring ion-exchange beads into the pool and there was a suspicious-looking bunch of metal piping already sitting in racks on the bottom. The pool looked very blue. When I asked what they were doing they stared at me as if I was crazy: "dechlorinating the moderator," one of them finally deigned to tell me. I nodded and backed out fast; I could see I wasn't wanted.

Opening speech. Some middle-aged American guy in a three-piece suit, probably ex-Wall Street rocket scientist, told the assembled geekswarm that they were the future of mankind. He said it in a voice choking with deep emotion. Physicists always did their best work by thirty, and this guy talked about his own career on the SSC project out in Texas, before the Death of Big Physics in the mid-nineties. The audience were hushed, as if chastened by the idea of being deprived of their accelerators by fiat.

Next on was a gangling youth named Curtis in baggy shorts, baseball cap, and iguana. (It was green, about half a metre long, and sat placidly on his shoulder throughout the talk.) Curtis talked very fast indeed about the fractal dimensionality of the universe as measured

using the Genocide Mechanics' new beat-wave petatron and some really eldritch decay paths they scoped out in a quark-gluon plasma when they cranked it up high enough to fuse the power supply. "I tell ya, at first I thought it was the drugs, man, but then I realized it was the bats. The vampire bats from beyond spacetime." He was talking about a fractal map they derived for a scalar field decay process; and it did look sort of like a bat, if you squinted at it by the light of a lava lamp after smoking too much dope.

Curtis got a standing ovation (whether for the delivery or the message), and the iguana made a mess down the back of his t-shirt. He didn't seem to mind.

Everyone then pissed off to the cafe or the bar, leaving a rather sad-looking Englishman to talk about cross-section derivatives in subcritical masses of plutonium to a nearly-empty auditorium.

I don't remember much about that evening, except that I woke up at ten the next morning with a splitting hang-over and three teenagers crashed out in the bathroom suite. Breakfast was black coffee and codeine, washed down with runny scrambled eggs a la hotel. Back to the program:

A talk about positronium, the care and feeding thereof, and how to bottle it for storage. One of the problems modern particle physicists face -- besides the lack of funding -- is that they don't have huge relativistic storage rings any more. The maximum energies the big old synchrotrons could get up to were pretty puny by current standards, but the one thing they were good at was acting as a relativistic reservoir. Stick a bunch of particles with a half life of a billionth of a second into a storage ring at close enough to the speed of light and they'll hang around for tea. But modern accelerators are all linear, and nobody can afford the big metal power bills. The panel discussed various condensation traps and magnetic bottle topologies (including a really weird five-dimensional Klein bottle) but didn't really resolve the issue.

Lunchtime: the Fabulous Rubensteins (who looked more like Shyster, Shyster and Flywheel) presented their pion-catalysed criticality experiment. It was the size of a truck fuel cell, and pumped out four watts of power less than it took to run -- but they said it had sucked in thirty watts two weeks earlier, and could theoretically achieve fusion bootstrap and run hot with a bit more tuning. More intrusions from the world of high finance: they cited some algorithms patented by Barclays de Zoet Webb and Whole Earth Systems in their control rig, and a couple of suits from Exxon were seen lurking at the back of the lecture hall. modeling systems (agoric decision processorsÑ basically evolutionary algorithms used for market simulations) on predicting particle state decay options. A lot of the weird shit the hard physics dudes get up to these days drops back to ground state via some really strange nondeterministic transition states. Zap some of them with enough energy along the way and you get even weirder, less probable, transitions. Financial modeling protocols evaluate particle decay chains in terms of "bid" and "offer" prices on their probability, and give really neat derivatives for that big discovery-killing. (No wonder the guys who wrote that software did well on Wall Street before the Softlanding.)

There was a cool cocktail party that night by the poolside, ghostly blue illumination courtesy of cerenkov radiation from the slow neutrons in the pond. I was surrounded by crazed physics geeks and geek-ettes, stoned on the most bizarre mixtures of smart drugs and neurotransmitter analogues imaginable: the introspection mixes actually slowed them

down enough for a mere mortal to talk to them and get something interesting back. It was really good. For a while I actually felt as if I understood the Pauli exclusion principle -- not as a law handed down from on high, but from the inside out. It didn't last, though. I went to bed, and the next morning the equations were as dry and cracked as the surface of my tongue.

Sunday morning I skipped breakfast. The Pion Overdrive Grrrls were bolting their petatron together in the banquet hall and I did not feel like receiving an intimate lesson in scattering effects if they got enthusiastic about testing it before the demo. It looked impressive -- all of ten metres long.

A seminar entitled: "embedded universes 101", discussing the possibility of creating Linde-Mezhlumian fractally-embedded self-reproducing universes -- in effect, mini-big-bangs contained within pocket black holes -- which rapidly deteriorated into quasi-religious ranting when someone in the audience asked a remarkably convoluted question about the practicality of "implementing the preconditions for a Barrow-Tipler strong anthropic cosmology" within the toy universes.

Some time during that last talk my brain underwent a loss of coolant accident and melted down. I confess: I'm not a true geek. The theological significance of the Higgs scalar field leaves me cold. I don't really understand how to create a pocket universe, or what it means. I'm just repeating what I heard there. These dudes are beyond it. Way beyond it. Whatever it is.

I wandered back into the banquet hall to see the grrrls demonstrate top quark decay characteristics. It went smoothly and for an encore they manufactured some W's and a handful of Higgs bosons. Then one of their laser stages failed and they shut the rig down. I got chatting to one of them afterwards and it turned out they were using home-brewed chirped-pulse amplifiers bolted straight in front of simple high-gigahertz network driver diodes -- lasers produced by the million for wavelength multiplexed networks like your cable video system.

I kid you not. Thirty years ago it cost ten billion ecus and a machine thirty kilometres in diameter. Today a bunch of teenagers spend maybe a couple of thousand ecus, build a Rube Goldberg contraption three metres long, and achieve a hundred times the peak energy.

And this is what a Particulate is about. Fast, cheap, and out of control. That law -- Moore's Law -- used to be just computers. But computers peaked, and now they're stitched into the collar of your shirt to tell the washing machine how much detergent it takes. Next it was biotechnology, but after the cancer fix and the old age hack all the really hot biogeeks went underground ... or became merchant bankers. That left physics. The old physicists hit Wall Street, leaving the field clear for the old-time hackers and phreaks.

Raw enthusiasm, and left-recursive universe generators. But they still get carded at the bar and they still can't blow up the world. Physics may have a bad rap these days, but it's harmless enough: a fine subject for kids to get enthusiastic about. I never did find out what happened to the Vampire Bats from Beyond Spacetime, though.