The Cosmic Half-Spin Hypothesis

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A Comment on the Closer To Truth YouTube post:
Seth Lloyd - Is Information Fundamental? (Jun 26, 2023)
https://youtu.be/wIoDO1kIS6M

Abstract: How can a fermion have half a unit of spin, which is the geometric equivalent of watching half of a skipping rope rotate as if the other half was there but invisible? The cosmic half-spin hypothesis proposes that the other half-unit of a fermion spin resides in a negative-energy *contraverse* located 24.7 billion lightyears backward in geometric time from our own. If true, this hypothesis means every fermion is a single spin-1 unit that alternates between two universes with each completion of one unit of spin.

Perhaps the most fascinating aspect of the century-old puzzle of half-spin is a possible deep connection to astrophysics.

In 2004, Jennifer Chen and Sean Carroll came up with, to the best of my knowledge, the first version of a dual universe that explicitly separates the universes along a space-like dimension. (William James Sidis arguably did something similar in 1925, but he appears to have co-located his versions — which is also interesting for time dynamics, but that's a different story.) I mention Jennifer Chen first because the paper contains two pairing concepts: spherical and dual-pair. The paired one comes later, indicating it's likely the less famous author. I came up with my version in 2007, not knowing about Chen-Carroll until years later. I started dual, switched to spherical the next day, then back to dual the day after! Boyle and Turok have some of my favorite papers on the topic since, unlike the earlier Chen-Carroll work, they emphasize the importance of keeping complete CPT symmetry. Barbour also wrote a book on it, though his handling of the critical negative-energy issue is spotty at best, slipping it in almost accidentally via an error in a definition and then focusing instead on the resulting gravitational dynamics.

I tend to do search spaces first and math later. For comparison, if a programmer starts writing code first and only later bothers later to check what was needed, the result tends to be noisy and inferior software (or equations). Recently, what I keep coming back to is that half spin *may* be a case of cross-universe entanglement, not much different from saying that half of each spin occurs in this universe and the other half in our Chen-Carroll contraverse. That sounds nonsensical if you focus only on xyzt distances, but we know experimentally from entanglement and wave collapse experiments that the universe is more complicated than that. In a bit-cloud universe, *all* separations necessarily collapse into momentum and energy allocations that create profound interaction barriers for *some,* but not all, activities.

Half spin would be one of those exceptions, falling into the "not all" category of bit-cloud relations. The masses and energies of pro (our universe) and contra (negative energy universe) particle pairs would remain profoundly isolated, literally in separate universes,

but their single unit of shared *spin* would stay in "one place," or at least not be subject to the same separation metrics.

The bottom line of the cosmic half-spin hypothesis is that every fermion half-spin observed in our universe would complete its full loop (loops matter!) as a contrafermion somewhere in a Chen-Carroll contraverse 27.4 billion lightyears distant in geometric (but not causal) time. That would be both delightful and a bit hilarious and, more importantly, at some point, testable. These are real entanglements with real consequences, with outcomes currently hidden within what we now consider "pure" quantum noise.

I should mention that dual-universe shared spin is just one branch of my hypothesis tree, and I currently rate it at no higher than about 50%. I could quickly end up chucking this entire branch out the window if it doesn't reduce complexity in the overall structure. In contrast, even though it sounds much more radical, I would rate my hypothesis that the weak-force-blind chiralities of the fermions have negative energy and mass at something like 97%. That one produces remarkable reductions in complexity and gives insights into the nature of time.