Infinitely Malleable Spacetime is a Math-First Fantasy

Terry Bollinger
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https://www.youtube.com/watch?v=4JXjqaN97IY&lc=UgwnFEo33jSLTW-k5hp4AaABAg

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Leonard Susskind Marrying Quantum Physics & General Relativity
https://youtu.be/4JXjqaN97IY

Leonard Susskind, please do not do this. Infinitely perfect, infinitely malleable, infinitely cost-free spacetime was Minkowski's fantasy, not Einstein's, though Minkowski eventually browbeat his former student into converting to his math-first faith. That conversion worked out great for Einstein for General Relativity, which works mainly with the astronomical energy budgets of the cosmos. However, Minkowski's math-first faith failed Einstein miserably when he attempted to construct low-energy, low-mass particles as tunnels between two universes: the original Einstein-Rosen bridges. Einstein abandoned his General Relativity theory to attempt such bridges since curves that sharp in GR exact a truly astonishing energy cost.

But surely one can make this energy cost disappear by mathematically superposing infinities of mostly mutually canceling classical wormholes on top of each other? Yes, of course. One can also model the flapping of a gnat's wing by superposing thousands of nuclear explosions that "mostly" cancel each other out. The ability to construct an energy-indifferent idea in the language of equations doesn't automatically make it a good idea, nor does it ensure that the idea has anything to do with real-world physics. As seen in labs, physics is remarkably consistent in conserving energy and limiting the resolution of reality when that energy is unavailable.

The last major incarnation of sharp-curves-are-free physics, superstring theory, did not end well or cleanly for much the same reason. In sharp contrast to the superstrings hypothesis — that's all it ever was — the original 1970s hadronic string theory was as solid as it gets. Accelerators worldwide documented how bungee cords composed of strong and electric forces and terminated by quark end weights produced lovely quantized string vibrations. Replacing those profoundly reality-based, lab-observable results with the math-first faith assumption that _only_ the equations matter counts as one of the saddest and most costly failures in the history of science.

Please, let's not do this again.

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