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Ballistic Resonance

and Fermi Pasta

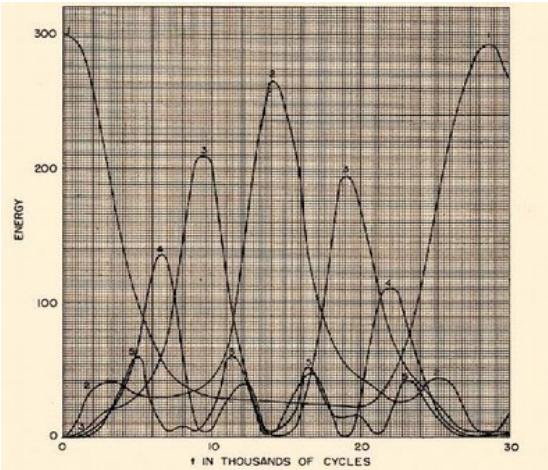

Fig. 1. The quantity plotted is the energy (kinetic plus potential in each of the first five modes). The units for energy are arbitrary. N = 32; $\alpha = 1/4$; $\delta t^2 = 1/8$. The initial form of the string was a single sine wave. The higher modes never exceeded in energy 20 of our units. About 30,000 computation cycles were calculated.

by Miles Mathis

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On July 13, *PhysOrg* published a report on this phenomenon, which tells us researchers at Peter the Great University in St. Petersburg have coined a term for mysterious heat flows at the micro and nano levels. They call it ballistic resonance, though we will see that the name is empty and misleading.

The strangest thing here is that the author of the article is given as Peter the Great University. I am not sure these editors are aware of it, but universities cannot write articles. They don't have hands.

They link this to the Fermi Pasta paradox of the 1950s, but miss the real link. That paradox was computer-generated only, while this problem comes from real experiments, so at first you wouldn't expect a link. I didn't, and coming in I thought there was probably no link. Since the Fermi Pasta paradox is computer-generated, I didn't see how it could include the charge field as a solution. But I could see immediately that the solution to the current problem with ballistic resonance is the charge field. We will sort this out below.

The Fermi Pasta problem was an apparent paradox in chaos theory concerning the fact that complicated physical systems continued to show periodic behavior, when it was expected that as time passed the system would become ergodic. This paradox indicated in the first instance (to me) that the math they were throwing at the problem was wrong. At first I thought it was only that. But since the math is an expression of the physics, I finally realized there WAS a link here between the two problems.

But let's start with the current problem on ballistic resonance, where we don't just have bad math (although we always see that as well). What we see here is the usual problem: the mainstream doesn't know about charge channeling at the nuclear level, so it doesn't understand the charge paths that determine all heat flows.

The researchers were using ultra-pure crystals, which is our first clue. They found that heat spreads very fast in these structures, in ways unexplainable using current theory. So they are forced to come up with new theory. They can't really do that, so they just come up with *new terms*, and then let those terms stand for new theory. The usual.

The use of ultra-pure crystals and the fast transmission of heat tells us that the charge channeling is very efficient. All conduction is a function of charge channeling at the nuclear and molecular levels, and this will give us the means to solve this.

By far the most amusing line in the article is this one:

For physicists, this experiment is vital because a chain of particles connected by springs is a good model of crystal material.

Is it? This just proves my previous claims, that quantum physicists actually don't have a clue what is going on. They are still working with models of particles connected by springs. The model they need is my model, where charge winds of real spinning photons channel through and between nuclei. This model explains their "resonances" far better than their pushed math. In fact, their math doesn't *explain* anything, since math has no explanatory power. What explains physics is physical answers, with models that are fully mechanical, fully visualizable, and fully diagrammable.

This sentence is also indicative:

Researchers of the Higher School of Theoretical Mechanics showed that the transition of mechanical energy into heat is irreversible if we consider the process at the finite temperature.

They are assuming there is some sort of transition of mechanical energy into heat, when there isn't. There is no transition, so nothing is either irreversible or reversible. They are simply over-complicating the problem, as usual. If we define heat as the motion of charge photons, then *all* energy is ultimately derived from heat. Heat and mechanical energy are just two words for the same thing. If anything is irreversible in any experiment, it isn't because there has been a transition. It is because the charge paths can't be reversed.

"Usually, it is not taken into account that in real materials, there is a thermal motion, along with a mechanical one, and the energy of thermal motion is several orders of magnitude higher. We recreated these conditions in a computer experiment and showed that it is the thermal motion that damps the mechanical wave and prevents the revival of oscillations," explained Anton Krivtsov, director of the Higher School of Theoretical Mechanics SPbPU, corresponding member of Russian Academy of Sciences.

No. There is no division of that sort, since all thermal motion is mechanical, and the reverse. Thermal motion is just the motion of charge as it moves through the material, and that motion could also be called mechanical, because it is the motion of real spinning particles. If there is any division of motion,

it is only a division of the motion of charge photons and the motion of ions or nuclei. Yes, the motion of larger particles is orders of magnitude lower, but in order to "recreate these conditions in a computer model", you obviously have to input the right particles in the right architectures. If you don't, you are sure to mis-model the whole thing. They are badly mis-modelling the whole thing, because they can't model charge as it moves through the nucleus or between nuclei. They need my diagrams to do that, and since they have closed me out of the field, they don't have them.

The growing amplitudes are explained by larger systems re-aligning to allow for more efficient charge channeling. We have seen many previous examples of this, as in doping, supermagnet creation, and so on. If you apply strong charge fields (either heat or current) to the right materials, you can get structural re-alignment among the nuclei to facilitate those fields. All nuclei are charge engines that feed off the charge field, and they are almost never at maximum efficiency or maximum power. They were created in stars or cores, where the fields were much stronger, so they can deal with much more powerful charge fields than the ones they inhabit here on Earth. In the normal ambient charge field here, they are operating at low levels, so we see the configurations they take at those levels. But if we vastly increase charge levels, those configurations can change, including the molecular configurations, and even the outer nuclear configurations. The mainstream is starting to admit that, especially with molecular configurations. See their recent work on table salt, as just one example of many.

The thing is, these re-alignments are not instantaneous. Depending on the structures involved, and the elements involved, the process can either be very fast or quite slow. And any resonances or periods seen have to include the charge field of the Earth, which is pointing straight up everywhere. So it matters how your experiment is aligned to the Earth's charge field. Are you inputting energy vertically or horizontally? *It matters*.

This reminds us that the Earth's charge field will always be coming in, so there is "external influence" even when the researchers think there isn't. They haven't figured out they can't block that, even with a created vacuum, so they always get resonances they can't explain.

OK, now let us return to Fermi Pasta. In my first draft, which I wrote very quickly, I said this:

As you can see, this solution cannot help anyone solve the Fermi Pasta paradox, because charge is not part of that model or that computer simulation. That paradox is created only by bad assumptions in how ergodic systems are created. As usual, there is no paradox. Only a mistake. I will not get into it here, but as a clue I can point you at chaos theory, which I have shown is false from the ground up. Chaos theory grew out of inequalities in Newton's equations, through Laplace and Lagrange. But since the source of those inequalities was misunderstood, chaos theory was grounded in sludge from the beginning.

But after getting up for a sandwich and sitting on that idea for about 15 minutes, I saw my mistake. The answer was staring me in the face, as usual. The charge field IS in the Fermi Pasta models, since they are using math from Chaos theory. Since Chaos theory comes from tweaking Newton's equations —which contain charge without anyone knowing it (see last link)—that is the problem there as well. In short, Newton's equations are unified field equations and they include the charge field. This is why the Lagrangian is a differential: the second term includes a charge field variation Newton missed, fine tuning the equation and making it match data much better. Although we are taught this was achieved with advanced mathematical analysis by Laplace and Lagrange, using differential equations, it actually wasn't. It was achieved by splitting Newton's field equations into two terms that, as a differential, were able to better express the field. In this form, the charge field was able to work in opposition to the gravity field, as it must. But since Laplace and Lagrange never understood their equations were

unified, *because Newton's equation had already been unified from the start*, the whole field was thrown into chaos. The mathematicians of Perturbation theory and then Chaos theory thought they were dealing with various remaining inequalities, ie unknowns, when what they were dealing with was the charge field. The charge field was unknown in a way, but it wasn't an unknown in the sense Chaos theorists think, since it isn't *unknowable*. It isn't random and isn't therefore "chaotic". Now that we know what is causing the "inequalities", we can dissolve these unknowns out of the field equations. Which is what I have done.

So the problem with Fermi Pasta is that, like the Chaos theorists before them, they didn't understand that their equations included the charge field. They thought they had a fairly simple computer model, but they forgot to tell the computer that the equations included the charge field. The charge field then allowed feedback loops to work in the model, creating mysterious periodicities. But once you understand that the charge field is included in any equations that come from Newton's field, and understand how the charge field works at the ground level, all those mysteries dissolve.