

## Phononian Science: current state and perspectives

(strictly for Physicists, to contemplate over a glass of seasoned brandy)

Deep in the Earth crust, there is a huge translucent isotropic crystal inhabited by, who else, the Phononians. For us Humans, phonons are just ripples in the solid-state elastic-field. But they can be – and are – infinitely intricate. They have large and small energies, all kinds of frequencies, they behave both as waves and as particles, they exhibit interference, they rebound from each other and from phonosurfaces, they interact among themselves and, to wrap it up, give rise to an amazing complexity. For once you unleash combinatorics, there is no way to know where it will stop. Indeed, homeostatic knots of phonons (i.e., elementary phonorganel) evolved over ages into a complete phonobiosphere from which eventually emerged the intelligent Phononians, totally confident that their minds can comprehend absolutely anything.

Needless to say, packets of phonons can travel at any group speed, except that they can never exceed what we Humans call the speed of sound. We know, of course, how the latter is related to the elastic constant and to the density of the medium, but how could the poor Phononians ever know it? For sheer lack of any comparison, they are convinced that they are surrounded by what they call phonovacuum and the experimental maximum speed limit leaves them completely dumbfounded.

Not surprisingly, Phononian scientists developed a theory according to which space and time are interrelated and form what they call the Mannrie geometry which has a metric singularity coincident with the maximum phonon speed. This theory goes a long way towards explaining some of the frustrating experimental discrepancies which emerged with the advancing precision of Phononian metrology. The Phononians also discovered a disquieting periodicity which seems to characterize their vacuum at very small distances. That, and related phenomena, is presently in the focus of their government-sponsored, institutional research relying on huge and costly phonosmashers. A decisive progress leading to the full understanding of the nature of the Universe, and of life itself, is expected to occur any time soon (plus, according to the Phononian government's PR spokespersons, a cure for phonocancer might follow just afterwards).

A few Phononians are convinced that there exists something more, something that travels faster than sound! But the majority says that such FTS objects are just crazy speculations, especially since the reported phenomena are eminently irreproducible. We Humans know, of course, that what they observe are extremely rare scintillations induced by occasional hard cosmic rays penetrating deep enough to hit their crystal. But the Phononian civilization evolved around one of the crystal imperfections (sparse islands in the vastness of their Universe) and their astronomical instruments cover barely one tenth of the crystal diameter, so how could they possibly know about cosmic rays?

Some Phononians also claim that their Universe (pardon, Phonoverse) is expanding, but get rebuffed as cranks by their peers. Again, we Humans know that the expansion is true and accelerating and that it is due to the relentless global warming (though not everybody believes in the latter).

We also know that any attempt to generate FTS phonons, such as firing a rifle against the crystal, would simply shatter it and produce any number of cracks in its fabric. To the Phononians that would be a totally incomprehensible cosmic catastrophe. Those on one side of a crack would suddenly completely lose any contact with those who happened to be on the other side – since phonons can not travel across cracks, for each party it would be as though the other half of the Phonoverse suddenly completely vanished.

I can just barely imagine what will happen to the Phononian Science (and Religion!) once we excavate their crystal and bring it to the sunlit surface. That should in fact happen very soon under the project DABAR (Diamond As Big As the Ritz) which was just approved by the EU Commission for Research within the Horizon Framework. They will be shocked, no doubt about that, and many Phonobel Prizes later they will finally realize that to cope with the new Phonoverse, they need two space-time singularities, one for Sound and one for Light. Consequently, they will have to look for a new space-time geometry allowing for two or, at this point, any number of singularities.

It strikes me that we might have a lot to learn from the Phononians' predicament, and perhaps even from this brief but obviously totally plausible story.

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