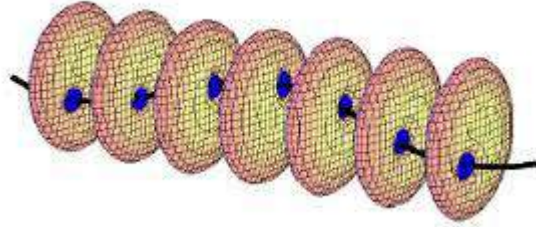


# THEORY OF HARMONIC PROPAGATION OF CONDENSED MATTER

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## Abstract

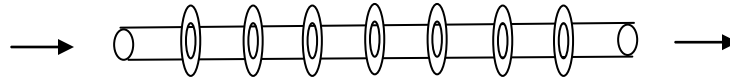
In this article we offer to enhance the standard model of a bosonic superconducting cosmic string (fig 1) and model it in our **quantum harmonic system** (fig. 2).



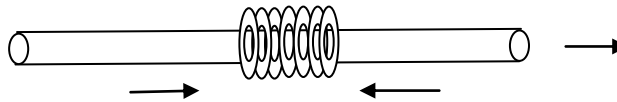
**Fig. 1**

## Elaboration

Accordingly, and contrary to the common bosonic string model in fig 1, we model our ultracold hollow cylindrical superstring (fig 2) as a spacetime piercing string integrated into a succession of external counter-rotating magnetic fields. (Compare with the spacetime piercing ability of neutrinos and their left-right counter-spinning ability).



**Fig. 2**



**Fig. 3.**

Our tunneling superstring system in fig. 2 consists of the open left entry to trap fermionic atoms in the vortex core, harmonizes them in vertex by shifted counter-rotating magnetic fields to unify them in a superimposed magnetic field in quantum squeezejunction (fig 3) and anti-gravity, and then superconducts them via superstring's right exit in mass propagation. The system in fig 3 functions similar to a musical squeezebox harmonika or accordion (see image below) which

expands and contracts its bellows by using trapped air to create pressure and vacuum and produce musical sounds.



### **Accordion**

Similarly to accordion functions, our quantum harmonic system in fig. 3 shifts external magnetic fields back and forth over ultracold particles of matter trapped and compressed in the vacuum tube of the superconducting superstring. In the lab, such a system can be represented by the vacuum tube with numerous counter-rotating electromagnets sliding back and forth over the tube and its trapped ultracold particles.

Because our ultracold superstring is nonrelativistic, it is not constrained to the multidimensional spacetimes in which superstrings are usually studied in high-energy physics. It is the first **harmonic condensed matter system proposed**, where superconductivity can be studied experimentally.