




THE FCC-EE HTS4 Project



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HTS4:

- Investigates the possibility of replacing the normal conducting short straight sections of the FCC-ee with high-temperature-superconducting (HTS) ones and nest quadropes-sextupoles
- 3 years project
- Ultimate goal: the construction of a 1-meter-long prototype module

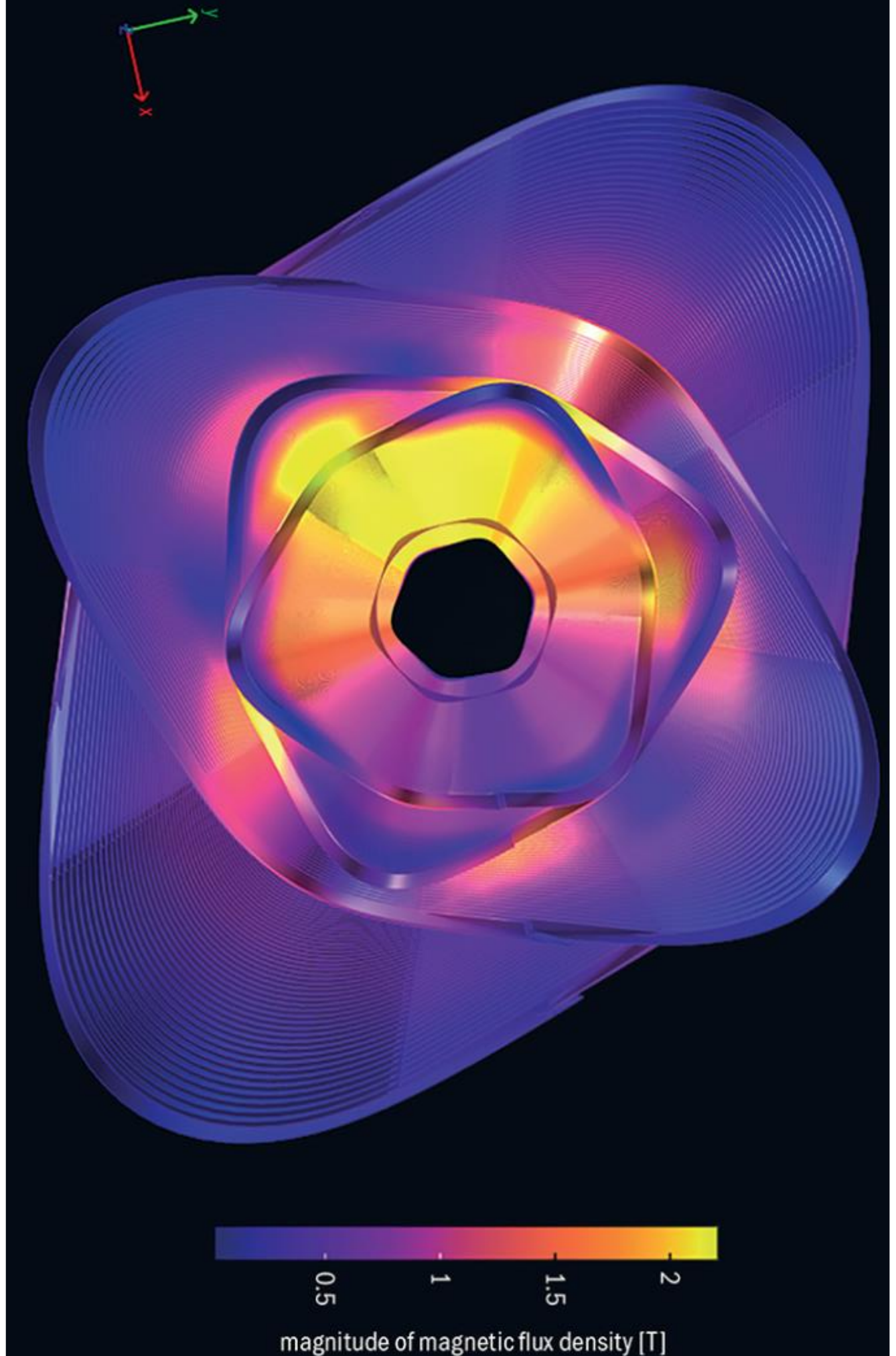
Normal Conductors:

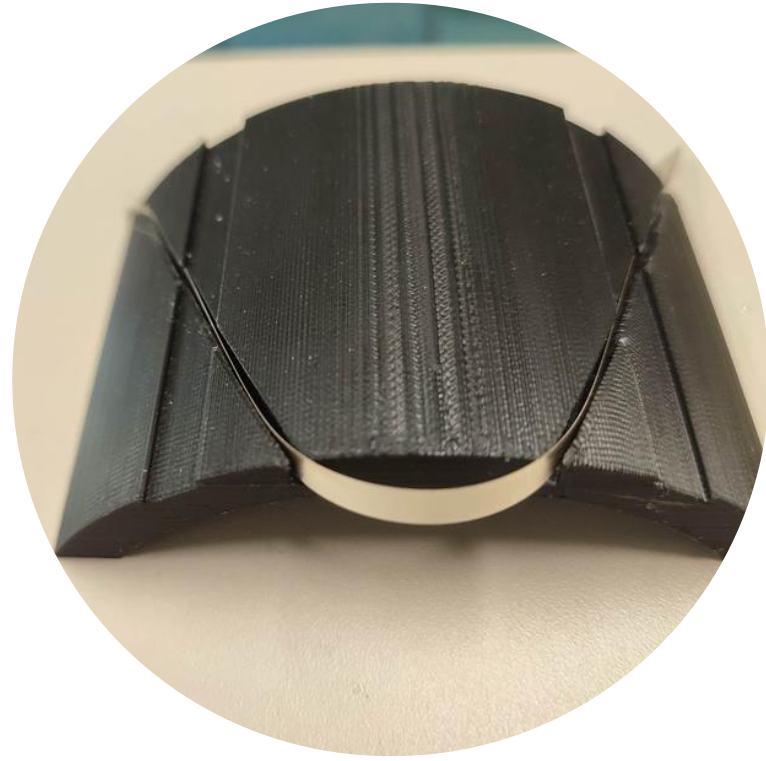
- Consume electricity through Ohmic Heating
- Produce extra heat that needs to be extracted

Conventional Superconductors:

- Need to be cooled below $\sim 5\text{K}$, which is power consuming

Thus, HTS may be a really good approach

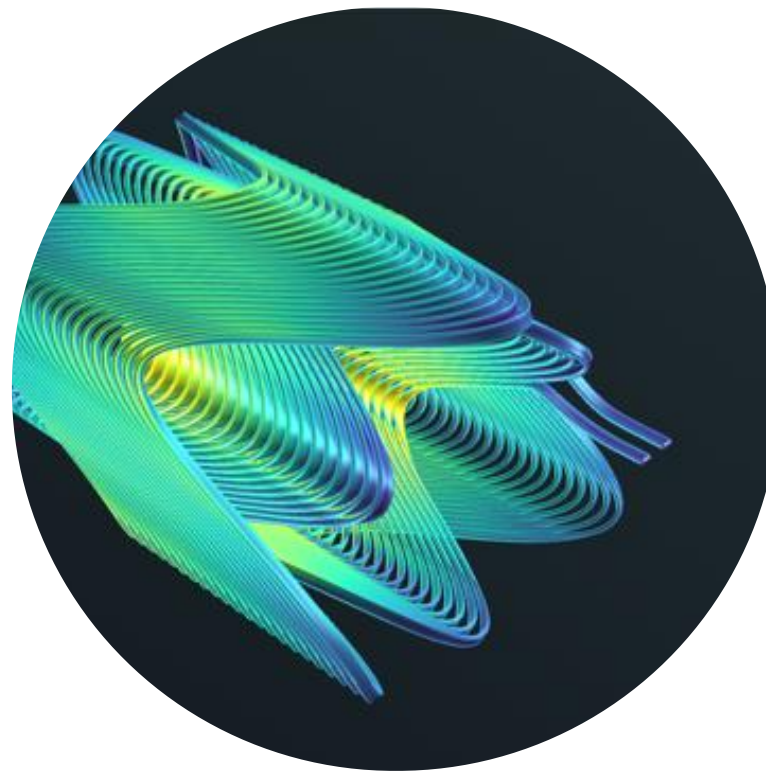




Challenge

The HTS ReBCO tape cannot be bent in every direction, without breaking

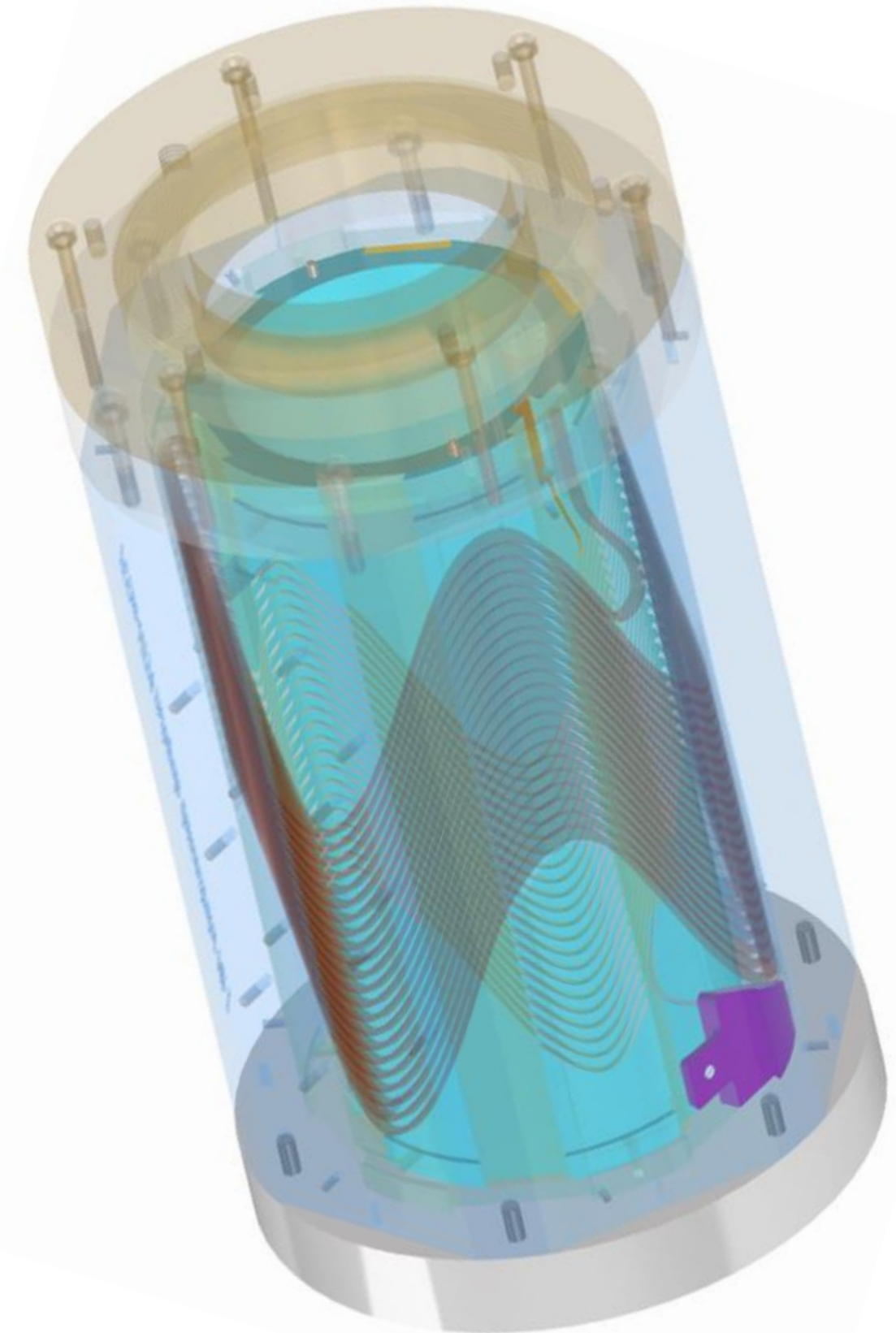
- With the use of Frenet–Serret formulas, a CCT (canted-cosine-theta) magnet could be constructed, without hard-way bending

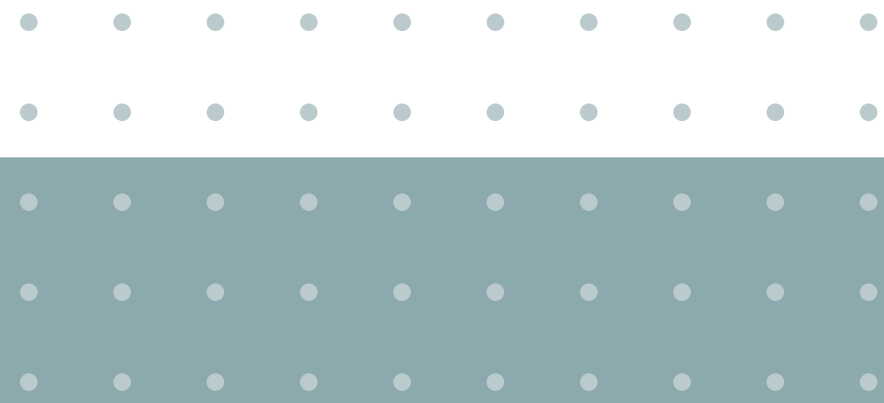


Vision

- minimizing power consumption
- gaining luminosity and flexibility in optics

A more sustainable, green, cutting-edge technology with no additional costs.





THANK YOU

Any questions?

