

Preskill et al suggest a highly interesting representation of holography in terms of quantum error correction codes. The idea is that time= constant section of AdS, which is hyperbolic space allowing tessellations, can define tensor networks. So called perfect tensors are building bricks of the tensor networks providing representation for holography and at the same time defining error correcting codes by mapping localized interior states (logical qubits) to highly entangled non-local boundary states (physical qubits).

There are three observations that put bells ringing and actually motivated this article.

\begin{enumerate}

\item Perfect tensors define entanglement which TGD framework corresponds negentropic entanglement playing key role in TGD inspired theory of consciousness and of living matter.

\item In TGD framework the hyperbolic tessellations are realized at hyperbolic spaces $H_3(a)$ defining light-cone proper time hyperboloids of M^4 light-cone.

\item TGD replaces AdS/CFT correspondence with strong form of holography.

\end{enumerate}

A very attractive idea is that in living matter magnetic flux tube networks defining quantum computational networks provide a realization of tensor networks realizing also holographic error correction mechanism: negentropic entanglement – perfect tensors – would be the key element. As I have proposed, these flux tube networks would define kind of central nervous system make it possible for living matter to experience consciously its biological body using magnetic body.

These networks would also give rise to the counterpart of condensed matter physics of dark matter at the level of magnetic body: the replacement of lattices based on subgroups of translation group with infinite number of tessellations means that this analog of condensed matter physics describes quantum complexity.