UCLA Department of Physics & Astronomy

COLLOQUIUM

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1-434 PAB

Grand Unified Theory of Mind and Brain: Space-Time Approach to 3D Vision

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Animals evolved brains to perceive and navigate 3D space. How can we reconstruct allocentric space in 3D from the egocentric 2D visual stimulation while constantly moving the eyes, head, and body?

To solve this question, I imposed the fundamental principles of physics, "causality and locality," onto every single synaptic connection. Consequently, I have constructed the space-time "Feynman" diagram of the entire human brain, where the signals flow in the order of MePMoS (Memory-Prediction-Motion-Sensing).

In this model, external 3D space is holographically reconstructed in the frequency-time domain by multi-frequency brainwaves. It follows the concept of Neural Holographic Tomography (NHT) and is memorized by the engram named the Holographic Ring Attractor Lattice (HAL). These new concepts of MePMoS, NHT, and HAL can be applied universally to all five senses for any animal, forming the "Grand Unified Theory of Mind and Brain."

Undergraduates Welcome!