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## **POS-E34 – Photonic Cooperativity and Coherence in Tubulin Architectures**

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From cytoskeleton to centriole, we investigate the photonic inner workings of the living cell. The cytoskeleton provides the structural organization of the cell, as the supporting architecture for all known forms of life. A major structural unit of this architecture is the cellular “microtubule,” a hollow tubular body composed of individual units of the protein “tubulin” organized in an array of spiral-shaped components. Recently, it was proposed that microtubules may exhibit useful photonic properties, as well as a myriad of known structural features. In this work, we explore the role that photonic super-radiance may play in facilitating excitonic transport and communication within the cellular architecture, from the cytoskeleton to the eukaryotic centriole—and beyond.

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