Substantial in vitro and physiological experimental results suggest that various biological phenomena like magnetosensitivity of metabolic reactions related to oxidative stress and the biosensing of magnetic fields in animal navigation might be based on the same underlying coherent spin physics. If this is correct, organisms might behave, for a short time, as “living quantum sensors” and might be studied and controlled using quantum sensing techniques developed for technological sensors. I will outline our approach towards performing coherent quantum measurements and control on proteins, cells and organisms in order to understand how they interact with their environment, and how physiology is regulated by such interactions. Can coherent spin physics be established – or refuted! – to account for physiologically relevant biosensing phenomena, and be manipulated to technological and therapeutic advantage?

Date & time: Thursday, January 14, 2021 at 5:00 pm
Location: meeting ID: 945 1663 0405 Passcode: 754579

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