

## **Effect of magnetic rotator on the exclusion zone of water**

**Quansheng Ren, School of EECS, Peking University**

Previous studies have shown that the near-surface exclusion zone expands extensively in the presence of incident radiant energy, especially the infrared light. On the other hand, bioelectromagnetism studies have shown that magnetic fields are one of the most important ecological conditions of the organism. All the materials are influenced to some extent by magnetic fields. A loop of electric current, an electron, an atomic nucleus and a molecule all can have magnetic moments. Developments of quantum biology also indicate that spin magnetic moment may have a direct impact on the biological process. Inspired by these researches, we studied the effects of the magnetic field and spin magnetic moment on EZ. A spinor field was generated using the magnetic rotator, which can be described as a magnetic field of a spiral structure. It is shown that spin magnetic moment profoundly expands these zones in an irreversible manner. Considering the universality of electron spin and structured water in the organisms, our study may have some implications in quantum biology research.