

# ***Animal navigation using magnetically sensitive chemistry***

**Prof. Peter J. Hore**

***Dept. of Chemistry, University of Oxford, UK***



Most physical scientists would probably treat with scepticism the suggestion that a chemical reaction could respond to a magnetic field as weak as the Earth's. After all, the energy of interaction of a molecule with a  $\sim 50 \mu\text{T}$  magnetic field is more than a million times smaller than  $k_B T$  at room temperature. Nevertheless, the kinetics of certain chemical reactions are magnetically sensitive. The key molecular species are pairs of transient free radicals whose electron-nuclear spin systems evolve coherently under the influence of internal and external magnetic interactions.

In this colloquium, I will discuss the proposal that the coherent quantum spin-dynamics of photo-induced radical pairs in cryptochromes (photo-active proteins) could be the mechanism of the light-dependent magnetic compass sense of migratory birds and other animals.



**Montag, 20.04.2015**

**17:15 Uhr, H 46**