



# Quantum Efficiency Seminar und Colloquium

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## **Spectroscopic signatures of quantum coherent energy transfer**

One of the most surprising and significant advances in the study of the photosynthetic light-harvesting process is the discovery that the electronic energy transfer might involve long-lived electronic coherences, also at physiologically relevant conditions. This means that the transfer of energy among different chromophores does not follow the expected classical incoherent hopping mechanism, but that quantum-mechanical laws can steer the migration of energy. The implications of such quantum transport regime, although currently under debate, might have a tremendous impact in our way to think about natural and artificial light-harvesting. Central to these discoveries has been the development of new ultrafast spectroscopic techniques, in particular two-dimensional electronic spectroscopy, which is now the primary tool to obtain clear and definitive experimental proof of such effects. In this seminar I will overview the experimental techniques developed with the purpose of attaining a more detailed picture of the coherent and incoherent quantum dynamics relevant to energy transfer processes, not limited to the two-dimensional electronic spectroscopy. Current opinions and debated issues will be emphasised and some possible future direction to address still open questions will be suggested.

**Date:** Tuesday, January 22nd, 2013 15:45  
**Location:** Lecture Hall 1, Hermann-Herder-Str. 3, Freiburg

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