



Joint LLC Seminar

Friday March 31st, 15:15
Sal A (L317), Dep. of Physics

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Probing performance and regulation of photosynthesis *in vivo*. From picoseconds to hours

Photosynthetic organisms are crucial for life on Earth as they provide food and oxygen and are at the basis of most energy resources. They have a large variety of light-harvesting strategies that allow them to live nearly everywhere where sunlight can penetrate. Their regulatory processes are particularly important for oxygen-producing organisms because an overdose of light in combination with oxygen can be lethal [1].

In the field of photosynthesis, cryo-electron microscopy has revealed the structure of so-called supercomplexes of photosystems I and II at near-atomic resolution. These structures lie at the basis of the light-harvesting reactions in photosynthesis and it is the combination of structural studies and functional spectroscopy that significantly contribute to the understanding the primary processes in photosynthesis [2].

Now that we have so much structural and spectroscopic knowledge about purified and isolated (super-)complexes, it is important to study the (ultra)fast light reactions *in vivo*. For these *in vivo* studies combining spectroscopy methods for molecular and functional information can be combined with microscopy methods for submicron structural and structural dynamics information.

Finally, several new directions for future biophysical research for the study of photosynthesis will be proposed.

[1] R. Croce, H. van Amerongen, *Nature Chem. Biol.* **10**, 492-501 (2014).

[2] R. Croce, H. van Amerongen *H Science* 369: eaay2058 (2020)

Sal A (L317) is located at the Department of Physics, Professorsgatan 1

**Coffee and refreshments will be served
before the seminar, from 15:00**



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