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The role of low-energy fluorescence bands in the photoprotection of the major plant light harvesting complex.

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Abstract content
   (Max 300 words)
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Special chars

Most photosynthetic organisms are designed to function optimally in low light conditions. However the typical daily incident irradiation is higher than the energy that a plant requires. Therefore it can lead to lethal consequences for the organism if the amount of light energy absorbed is not regulated efficiently. This regulation of the light energy is a major function of the light harvesting complexes in the Photosystem II (PSII) of the plants, a process known as non-photochemical quenching (NPQ). NPQ has been strongly linked to large, rapid intensity variations in the fluorescence; known as fluorescence intermittency or blinking. A major component of the thermal dissipation process, known a qE, is characterised by the appearance of low energy absorption and fluorescence bands. By mimicking the in vivo qE states of the major light harvesting complexes (LHCII) the protein dynamics under qE conditions can be monitored via changes in the absorption and fluorescent spectra. By using single molecule spectroscopy (SMS) it is possible to study a single antenna complex at a time in order to understand the molecular dynamics involved with qE. In this presentation the relationship between the fluorescence blinking and the low energy fluorescence bands (redshifts) is investigated.

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Main supervisor (name and email)
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