



Contribution ID: 155

Type: **Talk**

【723】 Correlated spin and structural dynamics in the recombination of nitric oxide (NO) to deoxy-Myoglobin in physiological media

Friday 31 August 2018 12:15 (15 minutes)

Myoglobin(Mb) is a small protein consisting of a single polypeptide chain and a heme as its active center. The photodissociation of the NO ligand from low spin MbNO leads its recombination to the high spin, domed and unligated porphyrin, which occurs over multiple timescales (from sub-ps to 100s ps) through an intermediate state that is presumed to be a high spin domed ligated form. We will present combined ultrafast X-ray emission spectroscopy (XES), X-ray absorption spectroscopy (XAS) and X-ray diffuse scattering (XDS) results obtained at the European XFEL and SACLA and correlate the spin to the conformational changes.

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Session Classification: SwissFEL –Recent Advances and Future Opportunities

Track Classification: SwissFEL –recent advances and future opportunities