The Use of Longer X-ray Wavelengths in Macromolecular Crystallography for Sulfur SAD Structure Determination

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The use of longer x-ray wavelengths (λ= 1.5-3.0 Å) in macromolecular crystallography has over the past few years almost become a routine tool for phase determination using the anomalous signal derived from the natively present sulfur and/or phosphorus atoms. Since the obtainable signal is very small, the experiment has to be conducted with great care. The challenges of the method are reviewed as well as some recent developments. Also, a survey about successful experiments carried out at beam lines and home sources around the world will be given.