

par **Koji Yonekura**
RIKEN SPring-8 Center, Japan
Biostructural Mechanism Laboratory

Electron 3D crystallography and single particle cryo-EM of membrane proteins for visualization of charges

Electron 3D crystallography is a useful method for structure analysis from tiny and thin crystals of membrane proteins and protein complexes, which often yield crystals too small or too thin for even the synchrotron X-ray beam and X-ray free electron laser. More importantly, it can visualize the charged states of amino-acid residues and metals, as the diffraction pattern formed by elastically scattered electrons is directly related to the distribution of Coulomb potential. Here I introduce structure determination with charges, and discuss further applications including a suitable treatment of electron scattering factors of charged atoms. The topic covers a hybrid approach of single particle cryo-EM and electron 3D crystallography for structure analysis of membrane proteins.

Hôte : Wai-Li Ling (IBS/Groupe de Microscopie Electronique et Méthodes)