PhD Position in Software Development for Automated High-Performance Electron Microscopy

A PhD student position is available in the Stahlberg laboratory to contribute to the development of advanced methods in automated high-resolution structure determination of biological macromolecules by cryo-electron microscopy. The laboratory will setup a frontier cryo-EM instrument in the basement of the Cubotron building. This instrument will be used in to perform real-space imaging and also reciprocal-space electron diffraction data collection. The automated control of the electron beam in diffraction mode in the electron microscope has to be developed. The beam shall expose the sample at various locations, but in synchronization with a high-speed camera that collects images and diffraction patterns at a speed of several thousand frames per second. Data will be recorded at very high speed and very large volumes, so that the data have to be processed in real time to extract the structural information before the noisy data are deleted.

This project will be at the interface between physics, electronic engineering, mathematics and computer sciences. It will involve collaborations with several other laboratories on campus and internationally.

The candidate for this PhD position should hold a Master's degree in Physics, Electrical Engineering, Computer Sciences, Mathematics, or a related field (in exceptional cases, a Bachelor's degree will also be accepted). The lab language is English. The candidate must be accepted by the doctoral school in Physics (https://www.epfl.ch/education/phd/programs/edpy-physics/).

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