

Thursday, 22th February, 12.00 pm, Seminar Room

Host: Dr. Niels C. Reichardt

High resolution cryoEM structure of flexible filamentous plant viruses

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Viruses with flexuous filamentous particles include plant pathogens that cause large economic losses in crops. These viruses contain several hundreds of coat protein (CP) copies arranged in helical fashion protecting a single stranded (+)ssRNA and display a common overall design. Their flexible nature has been a burden for crystallographic studies, and their structure has remained elusive. The latest developments in cryo-electron microscopy (cryoEM) have provided "cheaper" atomic resolution potential. We have characterized the structure of two flexuous plant viruses at ~ 4.0 Å resolution by cryoEM. The derived atomic models have revealed their structural homology and a universally conserved RNA binding site. Surprisingly, the described fold for their CPs is also similar to the one displayed by nucleoproteins of animal viruses such as influenza.