

3-D reconstruction

/

Jensen, Grant J.

Elesevier/Academic Press, 2010

Monografía

This volume is dedicated to a description of the instruments, samples, protocols, and analyses that belong to cryo-EM. It emphasizes the relatedness of the ideas, instrumentation, and methods underlying all cryo-EM approaches, which allow practitioners to easily move between them. Within each section, the articles are ordered according to the most common symmetry of the sample to which their methods are applied. * Includes time-tested core methods and new innovations applicable to any researcher * Methods included are useful to both established researchers and newcomers to th

Título: 3-D reconstruction edited by Grant J. Jensen

Edición: 1st ed

Editorial: Amsterdam Elesevier/Academic Press 2010

Descripción física: 1 online resource (472 p.)

Mención de serie: Methods in enzymology 0076-6879 v. 482 Cyro-EM pt. B

Nota general: Description based upon print version of record

Bibliografía: Includes bibliographical references and indexes

Contenido: Front Cover; Methods in Enzymology Cryo-EM, Part B: 3-D Reconstruction; Copyright page; Contents; Contributors; Preface; Methods in Enzymology; Chapter 1: Fundamentals of Three-Dimensional Reconstruction from Projections; 1. Introduction; 2. The Object and its Projection; 3. Taxonomy of Reconstruction Methods; 4. Discretization and Interpolation; 5. The Algebraic and Iterative Methods; 6. Filtered Backprojection; 7. Direct Fourier Inversion; 8. Implementations of Reconstruction Algorithms in EM Software Packages; 9. Conclusions; Acknowledgments; References Chapter 2: Image Restoration in Cryo-Electron Microscopy1. Introduction; 2. Image Formation Model in Electron Microscopy; 3. Estimation of Image Formation Model Characteristics; 4. Pseudoinverse Restoration-Mean-Square and Chi-Square Error Criteria; 5. Wiener Filter-the Minimum Mean-Squared Error Criterion; 6. Image Restoration for Sets of Heterogeneous Images; 7. Discussion; Acknowledgments; References; Chapter 3: Resolution Measures in Molecular Electron Microscopy; 1. Introduction; 2. Optical Resolution Versus Resolution in Electron Microscopy; 3. Principles of Resolution Assessment in EM 4. Fourier Shell Correlation and its Relation to Spectral Signal-to-Noise Ratio5. Relation Between Optical Resolution, Self-Consistency Measures, and Optimum Filtration of the Map; 6. Resolution

Assessment in Electron Tomography; 7. Resolution Assessment in Practice; Acknowledgments; References; Chapter 4: 3D Reconstruction from 2D Crystal Image and Diffraction Data; 1. Introduction to Electron Crystallography Data Processing; 2. Algorithms for Electron Crystallography; 3. Image Processing with 2dx; 4. Electron Diffraction Processing with XDP; 5. Electron Diffraction Processing in IPLT 6. Conclusions Acknowledgments; References; Chapter 5: Fourier-Bessel Reconstruction of Helical Assemblies; 1. Introduction; 2. Basic Principles; 3. Step-by-step Procedure for Helical Reconstruction; 4. Case Study of Helical Reconstruction of Ca-ATPase; 5. Conclusions; Acknowledgments; Appendix A Mathematical Foundations of Fourier-Based Helical Reconstruction; References; Chapter 6: Reconstruction of Helical Filaments and Tubes; 1. The Iterative Helical Real Space Reconstruction Approach; 2. Using IHRSR; 3. Intrinsic Ambiguities in Helical Symmetry; 4. Conclusion; Acknowledgments; References Chapter 7: Three-Dimensional Asymmetric Reconstruction of Tailed Bacteriophage1. Introduction: 3D Asymmetric Reconstruction of Tailed Bacteriophage; 2. Particle Boxing; 3. Generating a Starting Model of the Complete phi29 Phage; 4. Asymmetric Reconstruction of the Entire phi29 Phage; 5. Analysis and Interpretation of phi29 Reconstruction; 6. Summary and Future Prospects; Acknowledgments; References; Chapter 8: Single Particle Analysis at High Resolution; 1. Introduction; 2. Specimen Requirements; 3. Data Collection Requirements; 4. Introduction to EMAN; 5. Particle Selection/Boxing 6. CTF and Envelope Correction

Lengua: English

ISBN: 1-282-87967-7 9786612879678 0-12-384992-6

Materia: Electron microscopy- Technique Proteins- Structure Genomics

Autores: Jensen, Grant J.

Enlace a serie principal: Methods in enzymology (CKB)267000000097916 (DLC)2005255010 (OCoLC)

55201861 1557-7988

Enlace a formato físico adicional: 0-12-384991-8

Punto acceso adicional serie-Título: Methods in enzymology v. 482

Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es