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LINKS

- google scholar: https://scholar.google.com/citations?hl=en&user=qz6POUsAAAAJ&view_op=list_works&sortby=pubdate

Publications

PUBLICATIONS

- **AlignOT: An Optimal Transport Based Algorithm for Fast 3D Alignment With Applications to Cryogenic Electron Microscopy Density Maps.** *IEEE/ACM transactions on computational biology and bioinformatics*
Riahi, A. T., Woppard, G., Poitevin, F., Condon, A., Duc, K. D.
2023; 20 (6): 3842-3850
- **RNA structures and dynamics with Å resolution revealed by x-ray free-electron lasers** *SCIENCE ADVANCES*
Zielinski, K. A., Sui, S., Pabit, S. A., Rivera, D. A., Wang, T., Hu, Q., Kashipathy, M. M., Lisova, S., Schaffer, C. B., Mariani, V., Hunter, M. S., Kupitz, C., Moss III, et al
2023; 9 (39): eadj3509
- **Structural insights into functional properties of the oxidized form of cytochrome c oxidase.** *Nature communications*
Ishigami, I., Sierra, R. G., Su, Z., Peck, A., Wang, C., Poitevin, F., Lisova, S., Hayes, B., Moss, F. R., Boutet, S., Sublett, R. E., Yoon, C. H., Yeh, et al
2023; 14 (1): 5752
- **Changes in an Enzyme Ensemble During Catalysis Observed by High Resolution XFEL Crystallography.** *bioRxiv : the preprint server for biology*
Smith, N., Dasgupta, M., Wych, D. C., Dolamore, C., Sierra, R. G., Lisova, S., Marchany-Rivera, D., Cohen, A. E., Boutet, S., Hunter, M. S., Kupitz, C., Poitevin, F., Moss, et al
2023
- **Modeling diffuse scattering with simple, physically interpretable models.** *Methods in enzymology*
Peck, A., Lane, T. J., Poitevin, F.
2023; 688: 169-194
- **Amortized Inference for Heterogeneous Reconstruction in Cryo-EM.** *Advances in neural information processing systems*
Levy, A., Wetzstein, G., Martel, J., Poitevin, F., Zhong, E. D.
2022; 35: 13038-13049
- **Deep Generative Modeling for Volume Reconstruction in Cryo-Electron Microscopy.** *Journal of structural biology*
Donnat, C., Levy, A., Poitevin, F., Zhong, E. D., Miolane, N.
2022; 107920
- **CryoAI: Amortized Inference of Poses for Ab Initio Reconstruction of 3D Molecular Volumes from Real Cryo-EM Images.** *Computer vision - ECCV ... : ... European Conference on Computer Vision : proceedings. European Conference on Computer Vision*
Levy, A., Poitevin, F., Martel, J., Nashed, Y., Peck, A., Miolane, N., Ratner, D., Dunne, M., Wetzstein, G.
2022; 13681: 540-557

- **Protocol for structure determination of SARS-CoV-2 main protease at near-physiological-temperature by serial femtosecond crystallography. STAR protocols**
Ertem, F. B., Guven, O., Buyukdag, C., Gocenler, O., Ayan, E., Yuksel, B., Gul, M., Usta, G., Cakilkaya, B., Johnson, J. A., Dao, E. H., Su, Z., Poitevin, et al 2022; 3 (1): 101158
- **Cooperative allostery and structural dynamics of streptavidin at cryogenic- and ambient-temperature.** *Communications biology*
Ayan, E., Yuksel, B., Destan, E., Ertem, F. B., Yildirim, G., Eren, M., Yefanov, O. M., Barty, A., Tolstikova, A., Ketawala, G. K., Botha, S., Dao, E. H., Hayes, et al 1800; 5 (1): 73
- **Chemical crystallography by serial femtosecond X-ray diffraction.** *Nature*
Schriger, E. A., Paley, D. W., Bolotovsky, R., Rosenberg, D. J., Sierra, R. G., Aquila, A., Mendez, D., Poitevin, F., Blaschke, J. P., Bhowmick, A., Kelly, R. P., Hunter, M., Hayes, et al 1800; 601 (7893): 360-365
- **Case Study of High-Throughput Drug Screening and Remote Data Collection for SARS-CoV-2 Main Protease by Using Serial Femtosecond X-ray Crystallography** *CRYSTALS*
Guven, O., Gul, M., Ayan, E., Johnson, J., Cakilkaya, B., Usta, G., Ertem, F., Tokay, N., Yuksel, B., Gocenler, O., Buyukdag, C., Botha, S., Ketawala, et al 2021; 11 (12)
- **Near-physiological-temperature serial crystallography reveals conformations of SARS-CoV-2 main protease active site for improved drug repurposing.** *Structure (London, England : 1993)*
Durdagi, S., Dag, C., Dogan, B., Yigin, M., Avsar, T., Buyukdag, C., Erol, I., Ertem, F. B., Calis, S., Yildirim, G., Orhan, M. D., Guven, O., Aksoydan, et al 2021
- **Reproducibility of protein x-ray diffuse scattering and potential utility for modeling atomic displacement parameters.** *Structural dynamics (Melville, N.Y.)*
Su, Z., Dasgupta, M., Poitevin, F., Mathews, I. I., van den Bedem, H., Wall, M. E., Yoon, C. H., Wilson, M. A. 2021; 8 (4): 044701
- **Structure of the Visual Signaling Complex between Transducin and Phosphodiesterase 6.** *Molecular cell*
Gao, Y., Eskici, G., Ramachandran, S., Poitevin, F., Seven, A. B., Panova, O., Skiniotis, G., Cerione, R. A. 2020
- **Structure of the 30S ribosomal decoding complex at ambient temperature** *RNA*
Dao, E., Poitevin, F., Sierra, R. G., Gati, C., Rao, Y., Ciftci, H., Aksit, F., McGurk, A., Obrinski, T., Mgbam, P., Hayes, B., De Lichtenberg, C., Pardo-Avila, et al 2018; 24 (12): 1667–76
- **Aminoglycoside ribosome interactions reveal novel conformational states at ambient temperature** *NUCLEIC ACIDS RESEARCH*
O'Sullivan, M. E., Poitevin, F., Sierra, R. G., Gati, C., Dao, E., Rao, Y., Aksit, F., Ciftci, H., Corsepius, N., Greenhouse, R., Hayes, B., Hunter, M. S., Liang, et al 2018; 46 (18): 9793–9804
- **Nutrient transport suggests an evolutionary basis for charged archaeal surface layer proteins** *ISME JOURNAL*
Li, P., Herrmann, J., Tolar, B. B., Poitevin, F., Ramdasi, R., Bargar, J. R., Stahl, D. A., Jensen, G. J., Francis, C. A., Wakatsuki, S., van den Bedem, H. 2018; 12 (10): 2389–2402
- **Structure of the 30S ribosomal decoding complex at ambient temperature.** *RNA (New York, N.Y.)*
Dao, E. H., Poitevin, F., Sierra, R. G., Gati, C., Rao, Y., Ciftci, H. I., Aksit, F., McGurk, A., Obrinski, T., Mgbam, P., Hayes, B., DE Lichtenberg, C., Pardo-Avila, et al 2018
- **Atomistic string method solution for ion channel gating and modulation by general anesthetics**
Lev, B., Murail, S., Poitevin, F., Cromer, B., Baaden, M., Delarue, M., Allen, T.
AMER CHEMICAL SOC.2018
- **Aminoglycoside ribosome interactions reveal novel conformational states at ambient temperature.** *Nucleic acids research*
O'Sullivan, M. E., Poitevin, F., Sierra, R. G., Gati, C., Dao, E. H., Rao, Y., Aksit, F., Ciftci, H., Corsepius, N., Greenhouse, R., Hayes, B., Hunter, M. S., Liang, et al 2018
- **Intermolecular correlations are necessary to explain diffuse scattering from protein crystals** *IUCRJ*
Peck, A., Poitevin, F., Lane, T. J.

2018; 5: 211–22

- **Nutrient transport suggests an evolutionary basis for charged archaeal surface layer proteins.** *The ISME journal*
Li, P. N., Herrmann, J. n., Tolar, B. B., Poitevin, F. n., Ramdasi, R. n., Bargar, J. R., Stahl, D. A., Jensen, G. J., Francis, C. A., Wakatsuki, S. n., van den Bedem, H. n.
2018
- **Reduction of small-angle scattering profiles to finite sets of structural invariants** *ACTA CRYSTALLOGRAPHICA A-FOUNDATION AND ADVANCES*
Houdayer, J., Poitevin, F.
2017; 73: 317–32
- **String method solution of the gating pathways for a pentameric ligand-gated ion channel** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Lev, B., Murail, S., Poitevin, F., Cromer, B. A., Baaden, M., Delarue, M., Allen, T. W.
2017; 114 (21): E4158-E4167
- **The Renormalization Group and Its Applications to Generating Coarse-Grained Models of Large Biological Molecular Systems.** *Journal of chemical theory and computation*
Koehl, P., Poitevin, F., Navaza, R., Delarue, M.
2017
- **Gating Pathways for a Pentameric Ligand-Gated Ion Channel Solved by Atomistic String Method Simulations**
Lev, B., Murail, S., Poitevin, F., Cromer, B. A., Baaden, M., Delarue, M., Allen, T. W.
CELL PRESS.2017: 475A
- **Beyond Poisson-Boltzmann: Numerical Sampling of Charge Density Fluctuations** *JOURNAL OF PHYSICAL CHEMISTRY B*
Poitevin, F., Delarue, M., Orland, H.
2016; 120 (26): 6270-6277
- **Comparative Normal Mode Analysis of the Dynamics of DENV and ZIKV Capsids.** *Frontiers in molecular biosciences*
Hsieh, Y., Poitevin, F., Delarue, M., Kochl, P.
2016; 3: 85-?
- **AquaSAXS: a web server for computation and fitting of SAXS profiles with non-uniformly hydrated atomic models** *NUCLEIC ACIDS RESEARCH*
Poitevin, F., Orland, H., Doniach, S., Koehl, P., Delarue, M.
2011; 39: W184-W189