



Trends in Sub-Microsecond X-ray Science with Coherent Beams

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Deadline for manuscript
submissions:
closed (25 January 2022)

Message from the Guest Editors

Dear Colleagues,

For this Special Issue, we are inviting submissions exploring both the opportunities for and realization of sub-microsecond XPCS and CXD. Improving source coherence by three orders of magnitude puts equal demands on light sources, X-ray optics, detectors, data processing and storage, as well as data analysis and modeling. However, several additional issues remain undiscussed related to the practical difficulties of performing measurements with high-coherence beams: parasitic speckle, unwanted spatio-temporal correlations from the source, and handling an impending 1000-fold explosion of data rates. It remains to be seen what exemplary systems can be used as standards and benchmarks in this regime. Opportunities in quantum X-ray optics, nanosecond X-ray ptychography, artificial intelligence for data analysis, and other novel approaches remain wide open. We invite submission in all these areas, as well as reviews of diffraction limited light sources and their applications at sub-microsecond timescales.





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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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