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XFEL diffraction patterns representation method for classification, indexing and search.

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In our work we present a new method of feature vector calculation for XFEL diffraction patterns. Existing methods of image feature vector calculation developed for computer vision and patterns recognition are not effective for diffraction patterns analysis since they don't take into account inner properties of diffraction physics. In our research we developed the new method based on connection between spatial structure of a particle and pattern properties. Results showed that our approach improved classification, separation and clustering of experimental diffraction data.

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