

Deep learning based low-dose synchrotron radiation CT reconstruction

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Synchrotron radiation sources are widely used in various fields, among which computed tomography (CT) is one of the most important fields. The amount of effort expended by the operator varies depending on the subject. If the number of angles needed to be used can be greatly reduced under the condition of similar imaging effects, the working time and workload of the experimentalists will be greatly reduced. However, decreasing the sampling Angle can produce serious artifacts and blur the details. We try to use the deep learning which can build high quality reconstruction sparse data sampling from the Angle of the image and ResAttUnet are put forward. ResAttUnet is roughly a symmetrical U-shaped network that incorporates similar mechanisms to ResNet and attention. In addition, the hybrid precision training technique is adopted to reduce the demand for video memory of the model.

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