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## K-edge subtraction using an energy sensitive PSD

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Digital Subtraction Angiography is an important technique used to image arterial blood flow using an introduced contrast agent. A mask image (using no contrast agent) is initially acquired which is subtracted from subsequent images after introduction of the contrast agent, resulting in images of the only the agent used. However, given a detector that measures position and energy rather than the currently used integrating devices it is possible to use the K-edge in the absorption spectra of the contrast agent to conduct equivalent imaging. This study demonstrates this imaging possibility using a simulated data model and explores its limits under a number of initial conditions of assumed spatial and spectral resolution. The effects on the final image of different methods of image subtraction and pre-processing are also explored. It is found that a K-edge subtraction image retains equivalent properties as DSA for angiography contrast imaging.

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