Pinhole Camera for Neutron Diffraction

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The neutron instruments dedicated to stress analysis include slits or radial collimators to define the sampling volume. We examine the case when the receiving slit is displaced away from sample position. The resulting pinhole arrangement enables improving the spatial resolution for both angular dispersive or time-of-flight instruments. By analyzing the correlation between the real space and reciprocal space resolution functions we are able to specify the limits of this approach and identify the possible applications. The results of testing measurements performed at the VULCAN diffractometer are presented.