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## Pileup

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Pileup is a phenomenon that is inherent to CCD detectors, such as those that comprise the ACIS instrument on-board Chandra, which "under-sample" the mirror point spread function. Simply put, it occurs whenever two or more photons are detected as a single event, and thus it represents a loss of information from these events. This also causes a distortion of the energy spectrum since the apparent energy is approximately the sum of two (or more) energies.

The most complete resource on pileup in Chandra data is the Chandra ABC Guide to Pileup. Portions of the manual are also available as Why Topics.

Technical details are available in the paper "Event Pileup in Charge Coupled Devices" by J. E. Davis (2001, ApJ, 562, 575).

For help with pileup analysis, see the Fitting Spectral Data: Using A Pileup Model thread, which shows how to use the jdpileup model in *Sherpa* to fit data that is piled. There is also a CXC webpage comparing the Pileup correction in ISIS, Sherpa, and XSPEC.

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URL:  
<http://cxc.harvard.edu/ciao3.4/dictionary/pileup.html>  
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