

## Development of kilo-pixel arrays of transition-edge sensors for x-ray spectroscopy

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We are developing kilo-pixel arrays of transition-edge sensor (TES) microcalorimeters for future X-ray astronomy observatories or for use in laboratory astrophysics applications. For example, Athena/XMS (currently under study by the European Space Agency) would require a close-packed 32x32 pixel array on a 250-micron pitch with  $< 3.0$  eV full-width-half-maximum energy resolution at 6 keV and at count-rates of up to 50 counts/pixel/second.

We present characterization of 32x32 arrays. These detectors will be readout using state of the art SQUID based time-domain multiplexing (TDM). We will also present the latest results in integrating these detectors and the TDM readout technology into a 16 row x N column field-of-view instrument.