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High resolution seismic reflection profiling across the western Aizu basin fault zone, northeast Japan

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We show a new seismic reflection profile across active thrusts and folds along the western Aizu basin. We deployed 220 seismic channels, 10-Hz geophones, and mini-vibrator as a seismic source along a 7.3-km-long seismic line. Common midpoint stacking by use of initial velocity analysis successfully illuminates subsurface geometries of active fault-related fold to 1-1.5 two-way time. More detailed analyses including refraction and residual statics, migration, deconvolution, and time-space variant bandpass filters, and depth-conversion by use of stacking velocities will enable to obtain subsurface depth section of these active structures. In addition we will correlate reflectors with surface geology and boreholes to discuss their subsurface geometry and rates of fault slip.

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Keywords: Western Aizu basin fault zone, active fault, shallow seismic reflection profiling, southern northeast Japan