

[Experiment name*](#) North China Interior Structure Project-Experiment 6 (NCISP6)

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[Mobilization date*](#) 2007-09-09

[Demobilization date*](#) 2008-09-30

[Number of stations:](#) 60

[Network Code and Years:](#) 1A, 2007-2008

[A brief summary of the experiment:](#)

We have deployed a 1000-km long temporary seismic array in northeastern China, extending from Central Asian Orogenic Belt (CAOB) in the northwest to North China Craton (NCC) in the southeast, including 60 broadband seismic stations. From this array, we have gotten more than 268 GB raw seismic data, and studied the crust and upper mantle structures of the profile.

[Preliminary scientific results, if any:](#)

A crustal seismic image beneath the NCISP6 is presented using a velocity structure imaging technique for receiver functions. The velocity image shows four significant features: (1) crustal structures characterized by dominant low-velocity zones and a velocity inversion in the southeast; (2) large-scale dipping strata in the northwest; (3) offset of the Moho beneath the Tanlu Fault Zone; and (4) well-partitioned matching of the crustal structures with surficial geologic observations. Combined with geochemical evidence, our imaged structures provide insight into the rejuvenation processes of the evolving crust in the eastern NCC caused by structural, magmatic and metamorphic processes in an extensional setting. The fossil structural fabric of the convergent boundary in the eastern CAOB indicates that the back-arc action of the Paleo-Pacific Plate subduction did not reach the hinterland of Asia.

[Approximate amount of data \(in MB\):](#) 268000

[Describe any known problems with the data or particular problems encountered during the experiment:](#)

[List of publications submitted:](#)

1. Zheng, T., Y. He, J. Yang and L. Zhao (2015) Seismological constraints on the crust structures generated by continental rejuvenation in northeastern China, *Scientific Reports*, doi: 10.1038/srep14995.
2. Wang, B., L. Chen, Y. Ai and Y. He (2013) Crustal structure and mantle transition zone thickness beneath the northeastern area of the North China Craton and adjacent region, *Chinese J. Geophys.*, 56(1): 60-68,doi:10.6038/cjg20130107.
3. Li, M. and Y. He (2011) Lithospheric structure beneath northeastern boundary region of the North China Craton from Rayleigh wave dispersion inversion, *Acta*

Seismologica Sinica, 33(2), 143-155.

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