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Interactive comment on "Sensing earth and environment dynamics by telecommunication fiber-optic sensors: An urban experiment in Pennsylvania USA" *by* Tieyuan Zhu et al.

Baoshan Wang (Referee)

bwgeo@ustc.edu.cn

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In this paper, the authors presented the a one-year continuous DAS experiment, which is the first long term urban DAS practice with "dark fibre" in eastern US. The DAS records are callibarted with seismic records from a 3-component seismic station. The DAS recorded signals from natural earthquakes, thunderstorms, mining explosion, pace steps, and even live music. The experiment is interesting and the results are important references for future DAS applications. The paper is well written with appropriate analysises. Thus I would recommend publication after a minor revision with further clarification on following points.

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Discussion paper

Major points: 1, Two seismometers (SSPA, PSRS) were used respectively for calibration and signal comparison. If possible I would suggest to use the same station for different purpose. And please mark the relative location of different observation in at least one of the maps. 2, Line 157, “DAS surface energy is much stronger than S-wave”, which is not obvious to me. Please further clarify this. 3, For the blast signal (section 5.2), I would expect the Rayleigh surface wave to be dominate, which is unlikely to show flipped polarity. Please further discuss this issue.

Minor points: 1, Please clarify the frequency band of seismometers used. 2, Please mark the arrival times of P, S, and surface waves in corresponding seismograms (Figs. 3,4,6,13,14). 3, Fig. 7, the subfigures are not capationed. 3, In fig. 8, please also provide the spectra of different signals from seismometer for better comparison. 4, Fig. 8, add the unit of horizontal axis (Hz).

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