Comparisons between different installations of broadband seismometers at soft soil site

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To help to evaluate and mitigate possible earthquake hazards around capital area in China, there will be 60 portable broadband seismic stations have to be deployed in the metropolitan area in the coming years which are sponsored by a Chinese National Key Research and Development Project. One of the biggest challenges for broadband seismic observation in this area comes from the high cultural noises from anthropogenic activities, and the soft soil environment could be another inevitable factor. An effective and standardized installation method need to be found to provide good noise level performance with ease and reasonable cost as well. Recently, released posthole sensors that can be deployed at the bottom of shallow boreholes have been proved to be an ideal option as the next-generation installation method of broadband seismometer due to its adaptability to surface tilt noise and thermal stability. Considering the fact that all seismic instruments in this experiment will be supported by China Seismic Array Instrument Center and we do not have special-designed posthole seismometers available at this time, we are curious that if the traditional seismometer that we have could be installed in a posthole way and get an improved noise performance, and we are also eager to see how much different between different installation setups, and finally design a installation method for the coming project. At a typical site near Beijing, we collected nearly 20 sets of seismographs to compare their noise performance based on their different installation methods, depths, insulation methods and their eases and costs. The site construction has been finished in November in 2018, and instrument deployments will be expected to finish by the end of this year. In this poster, all of the results from this experiment will be presented and discussed.