

Topic	Using existing communication tower sites as seismic sites
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Version	Sept. 1999; DOI: 10.2312/GFZ.NMSOP-2_IS_7.2

Very often less experienced newcomers in seismometry consider mountain peaks with existing communication towers as potential seismic station sites, particularly if they are building an radio frequency (RF) telemetry seismic network. Such places appear to be an easy and inexpensive solution. Access problem is solved, RF communication paths to the central recording site, which is usually situated in the capital or another big city, is supposedly free, main power lines, and even phone lines are readily available.

Unfortunately, such sites also have several serious drawbacks and are in fact rarely suitable for seismic stations. The most important reasons are that:

- existing high towers that sway during windy periods cause high-amplitude, low-frequency seismic noise and may cause large numbers of false triggers with triggered seismic systems and deteriorate low frequency seismic signals. Consequently, a diminished seismic station gain is used resulting in a low detectability of the station;
- there is usually a very high probability of RF interference between seismic RF telemetry system and other users. RF interference may easily impair seismic data transmission and consequently seismic system reliability. Several ‘high power’ parties (compared to one watt or less of RF power used in seismic telemetry) are potentially polluting the RF space at such places. In addition, if other users do not maintain their RF equipment properly, the RF energy radiated within uncontrolled side lobes worsens this danger (this happens quite frequently in developing countries.
- if such sites are inhabited, it is likely there will be too high man-made seismic noise due to human activities);
- the topography of such mountain peaks is rarely suitable for a seismic station. Communication antennae towers usually try to cover an area as large as possible, therefore, as a rule, they are placed on the highest mountains in a country or region;
- nearly all such sites have powerful diesel generators to support communication equipment during power outages. When in operation, these generators are a major source of man-made, high frequency seismic noise. Of course, these generators will surely be running after a strong earthquake because that is precisely when it is most likely that the main power lines will fail. Since the periods during strong earthquakes and following aftershock sequence are the most important for the seismic network, the existing communication towers definitely are not at all suitable for seismic sites.