Point markers in replacement of odometer driven positioning:
effects and possible problems

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It is widely known that, in GPR prospecting [1-2], sometime it is not possible to make use of the customary odometer for the recording of the position of the measurement points along the observation line. Consequently, in these cases the human operator is compelled to make use of point markers placed at known positions (measured with a tape) along the observation line. In particular, this can happen on the sand of a desert and on the polar ice [3], but it might happen also just due to some ill-functioning of the odometer. Notwithstanding, quite rarely the effects of the use of the point markers have been examined on the basis of some experimental test. At the conference, we will show an experiment where the same observation line has been gone through several times, first making use of the odometer included in the exploited GPR system and then making use of marker points. A third time, the same path was still travelled without odimeters and taking the marker points without making use of any laptop command. These were replaced just by stopping for some seconds the GPR in any marker point (but keeping it switched on). This option can be useful in cases where e.g. the command has to be given through a touchscreen. The observation line was 15 m long, and was placed on a flat smooth and tough floor. This means that the line offered favourable conditions for the use of the odometer, and so the positions of the anomalies identified making use of the odometer are considered as the correct positions of the buried targets. This has allowed a quantification of the displacements from the correct position of the buried anomalies when making use of marker points taken with a step of one meter from each other. A larger and deeper dealing is available in [4].

References


