3D imaging ground-based synthetic aperture radar (GBSAR)

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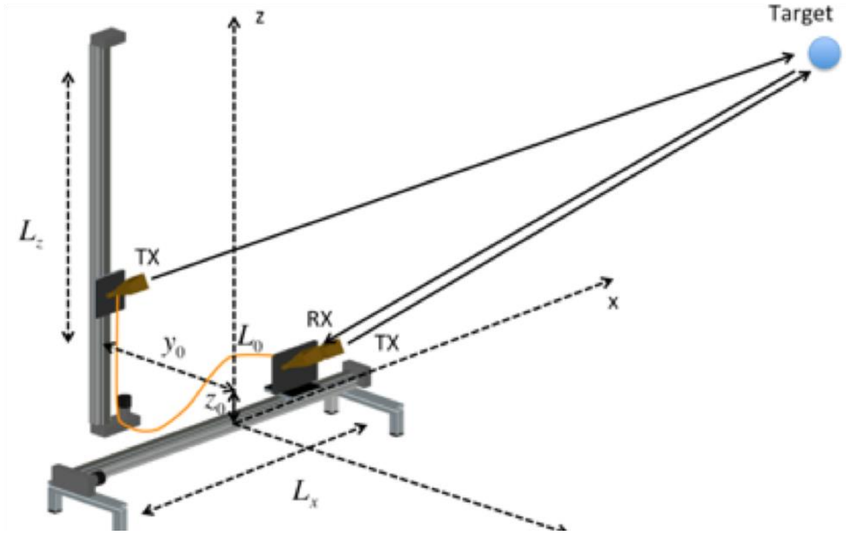
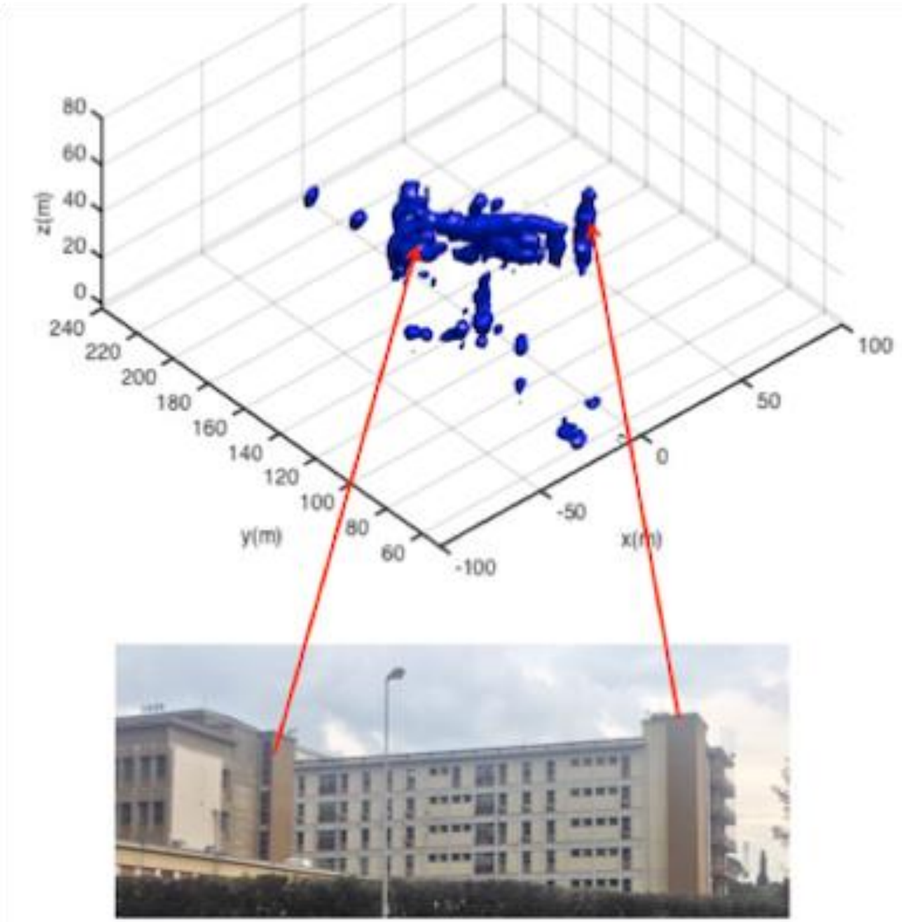
Invention

The invention consists of a ground-based synthetic aperture radar capable of acquiring both three-dimensional and two-dimensional images. With the use of a third antenna placed on a vertical track the radar is able to acquire three-dimensional images simultaneously with the horizontal track that allows an interferometric monitoring.

The patented radar is able to quickly acquire azimuth images without resolution in elevation (2D) and slower images with resolution both in azimuth and in elevation (3D). Unlike previous technologies, the patented solution can therefore be used for various monitoring and remote sensing operations using the same configuration. The invention makes it possible to carry out interferometric measurements (monitoring) and 3D models of the scenarios under investigation at the same time. This radar can be used in complex scenarios such as tunnels or very steep slopes.

Drawings
& pictures





Industrial applications

The technology allows the development of a ground-based radar system capable of returning 3D images of the target, even in the case of rapid movements; the technology implements a system for speeding up 3D remote sensing operations.

The main industrial applications are to be identified in the civil, industrial and military sectors that require remote sensing of displacements, as well as landslides or other geological events, as well as for monitoring quarries, mines, tunnels and other architectural structures.

Possible developments

The patent is available under an exclusive/non-exclusive license or sale. The license are available for the entire remaining term of the patent titles.

The research group is available for new research activities in collaboration and on behalf of third parties, technical insights, scientific advice, also aimed at raising the TRL of technology.

The TRL of the invention is 6.

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