

Development of new underground exploration method

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Many accidents, including sink-hole, have happened under construction because of unexpected underground utilities, despite of performing the site investigation. To solve these problems, new geophysical exploration method, different from previous ones, is developed. An electric field analysis is performed with underground utilities, the world's first. After measuring the electrical resistance values by applying a voltage to the sensor installed on the ground surface, buried location, direction, and size of the cylindrical underground material are predicted by using the developed algorithm. This technology is 5 times deep in depth of exploration, 6 times shorter in exploration times and 20 times shorter in analysis time than existing technology. This technology is listed in 5.4.4. of KEPCO cable tunnel design guidelines and applied in several sites, such as substations and cable tunnels. So, it is contributed to timely completion and stabilized power supply due to accident prevention of underground project.