

ABSTRACT

Landslide sensors play a crucial role in monitoring and early detection of potential soil landslides, aiming to reduce natural disaster risks and economic losses. This paper discusses the development of a landslide sensor using Optical Time Domain Reflectometry (OTDR) to enhance accuracy and efficiency in monitoring. OTDR is an optical fiber-based technology that utilizes light reflection to analyze soil deformation changes. The utilization of OTDR sensors can yield detailed data regarding soil deformation, moisture variations, and related geological activities.

Optical Time-Domain Reflectometer (OTDR) is an important device in the characterization and maintenance of fiber optic networks. OTDR is used to measure the reflection and dispersion properties of light in optical fibers, as well as to identify problems such as physical damage, cracks, poor connections, or undesirable power reduction in fiber optic networks.

Keywords: Landslide Sensor, OTDR, Soil Monitoring, Optical Fiber