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Real Time Landslide Monitoring via Wireless Sensor Network

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Rainfall induced landslides are a common phenomena in the Western Ghat region of Southern India and result in numerous fatalities and damage to property. In order to collect the most relevant and useful data, at the time it is most needed, a wireless sensor network is being used for landslide monitoring. The advantage it gives to landslide monitoring is that it is an inexpensive and reliable way to communicate rapidly over a long distance and inhospitable terrains, collect data in real-time, and alter the data collection rate remotely to suit current environmental conditions. We have implemented a real time landslide monitoring system over a seven acre active complex landslide site. An array of geological sensors (piezometers, tiltmeters, strain gauges, rain gauges, dielectric moisture sensors, geophones) has already been deployed and the data is being automatically collected and forwarded via the wireless sensor network. The geotechnical data is then transferred over 300 km via a satellite link to a remote monitoring station for further analysis. This will give us a better understanding of landslides in this region and prevent the loss of human life.