

Monitoring Ground Movements at Mining Operations

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Old-time surface miners had a saying, “If you aren’t having ground failures, your slopes are over designed.” While a few mine operators may still adhere to this philosophy, most of today’s mine operators realize the potential consequences of ground failures and conduct extensive pre-mining exploration and geologic evaluations to design their pits and highwalls. Nonetheless, pits are often placed where ore recovery can be maximized even when unfavorable geologic conditions exist. This results in the need to monitor slope conditions to protect miners, equipment, and ore reserves. Mining operations worldwide make extensive use of virtually every type of ground monitoring technique: visual inspection, crack meters, extensometers, surveying/prisms, radar, Lidar, and InSar. This presentation will discuss the more advanced methods for monitoring slope movements and each method’s applicability to local- and regional-scale landslide monitoring.