

JOINT MAPPING THROUGH PHOTOANALYSIS SYSTEM

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Joint Mapping through photoanalysis system¹SILVA, V. C., ²GAMA, E.M.
¹University Federal of Ouro Preto-UFOP, Ouro Preto, Brazil; ²University Federal of Minas Gerais-UFMG, Belo Horizonte, Brazil. Since joint orientation and spacing has a profound influence on blasting design, wall control and stabilization; an advanced digital image analysis software (WipJoint) was developed by WipWare Inc., Canada, in order to document the jointing patterns encountered. It also defines the orientation and spacing of the joints and from this predicts the blastability of the rock. Armed with this information blasters can adjust drill patterns and wall control methods to compensate for the changing conditions. This photoanalysis system also allows mine planners, blasters, geologists and design engineers to adjust patterns based on joint characteristics to minimize overbreak and reduce underbreak resulting in more competent support and safer openings. WipJoint uses simple photographs or video tape images of the jointing patterns that are apparent on in-situ rock surfaces. The stored images are captured and enhanced, by innovative artificial intelligence software that recognizes the orientation and spacing of the joints. The professors of Mining Department of UFOP and UFMG have been using with success in their blasting research, at different mines, a photoanalysis system to assess the comminution factor which is the mean block size based on jointing before the blast divided by the mean block size measured after the blast. This has allowed to predict fragmentation based on jointing data for future shots and blast models has been adjusted to produced more accurate results.