Performance of Underground Communications Systems including Through-the-Earth Magnetic and Electric Communications Systems in United States Mines

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For the past decade there have been great advances in the development and deployment of wireless communications systems for use in underground mines. Every underground coal mine in the United States has a two way wireless communication and tracking system in place and operational, as do most of the underground Metal/Non-Metal mines. This seminar will present information about the nature of radio propagation in the underground environment. It will also talk about the development and usage of two way Through-The-Earth communications systems.

Steven Schafrik is a Research Associate Professor in the Virginia Centre for Coal and Energy Research at Virginia Tech. He is currently conducting research on through-the-earth communications, underground wireless communications, and underground mine ventilation. He has experience conducting research for a variety of government agencies, several companies and private foundations. These projects have involved several academic departments and graduate and undergraduate students. He also provides support for the Virginia Centre for Coal and Energy Research (VCCER), Mining and Minerals Engineering (MinE) and Materials Science and Engineering (MSE), including development of custom software and information systems support.