

1. Record Nr.	UNINA9910647770403321
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Titolo	Velocity-Free Localization Methodology for Acoustic and Microseismic Sources // by Longjun Dong, Xibing Li
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-19-8610-X
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (353 pages)
Disciplina	620.2
Soggetti	Mining engineering Fire prevention Buildings - Protection Engineering geology Acoustics Natural disasters Mining and Exploration Fire Science, Hazard Control, Building Safety Geoengineering Natural Hazards
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Developments and New Insights -- Influence of temperature on acoustic emission source location accuracy -- Effects of acoustic wave velocity on location accuracy in rocks -- Three-dimensional analytical solution under cube monitoring network -- Three dimensional comprehensive analytical solutions and their application in unknown velocity mining system -- A velocity-free source localization and it application in mines -- A Microseismic/Acoustic Emission Source Location Method Using Arrival Times of PS Waves -- An efficient closed-form solution in three-dimensional structures -- Collaborative localization method using analytical and iterative solutions and mining application -- A multi-step source localization method with narrowing velocity interval of cyber-physical systems in buildings -- Acoustic source location and experimental verification for two-dimensional

irregular complex structure -- Velocity-Free MS/AE Source Location Method for Three-Dimensional Hole-Containing Structures -- Acoustic Emission b Value Characteristics of Granite under True Triaxial Stress -- Micro-Crack Mechanism in the Fracture Evolution of Saturated Granite and Enlightenment to the Precursors of Instability -- Velocity-Free Localization of Autonomous Driverless Vehicles in Underground Intelligent Mines -- Localization and Discrimination of Microseismic/AE Sources in Mining: From Data to Information -- Slope stability analysis using the velocity-free source localization method -- Qualification assessment for pavements using velocity-free source localization method.

Sommario/riassunto

In this book, we proposed velocity-free localization methods for acoustic and microseismic sources. This method does not require predetermination of wave velocity, which is a dynamically adjusted free real-time parameter. These methods solve the problem of large localization error caused by the difference between measured wave velocity and actual wave velocity in the source area and greatly improve the positioning accuracy. They are suitable for complex structures where the wave velocity changes dynamically in time and space, such as mines, bridges, buildings, pavements, loaded mechanical structures, dams, geothermal mining, oil extraction, and other engineering fields. This book includes progress in the development of localization methods, factors affecting the accuracy of source localization, analytical methods without the pre-measured wave velocity, velocity-free numerical methods for localizing acoustic sources, combined optimal velocity-free localization methods, velocity-free source localization considering complex paths of spatial structures, and theories as well as some cases of engineering applications of these methods.
