

1. Record Nr.	UNINA9910662277303321
Autore	De Anirban
Titolo	Geotechnical site characterization // Anirban De
Pubbl/distr/stampa	New York, NY : , : Momentum Press, , [2016] ©2016
ISBN	1-60650-533-5
Descrizione fisica	1 online resource (xiv, 217 pages) : illustrations
Collana	Geotechnical engineering collection, , 2376-4953
Disciplina	624.1510285
Soggetti	Geotechnical engineering - Design and construction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"April 2017"--Cover. "NHI course no. 132031"--Cover. "Report date: November 2016"--Technical report documentation page. "Report no. FHWA NHI-16-072"--Technical report documentation page. "Principal investigator(s): J. Erik Loehr [and three others]"--Technical report documentation page. "Performing organization: Parsons Brinckerhoff, Inc.; One Penn Plaza"--Technical report documentation page.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction and overview -- 2. Site characterization process -- 2.1 Introduction -- 2.2 Background research -- 2.3 Site reconnaissance -- 2.4 Field exploration -- 2.5 Subsurface profiles -- References -- 3. Geophysical site exploration methods -- 3.1 Introduction -- 3.2 Geophysical methods using electromagnetic waves -- 3.3 Geophysical methods using mechanical waves -- References -- 4. In-situ geotechnical exploration and sampling methods -- 4.1 Standard penetration test -- 4.2 Cone penetration test -- 4.3 Vane shear test -- 4.4 Pressuremeter test -- 4.5 Dilatometer test -- 4.6 Full-flow penetrometers -- References -- 5. Geotechnical laboratory testing methods -- 5.1 Introduction -- 5.2 Sample preparation -- 5.3 Laboratory index tests -- 5.4 Laboratory performance tests -- 5.5 Significant figures for geotechnical laboratory data -- References --

6. Specialized site characterization methods -- 6.1 Geoenvironmental site characterization -- 6.2 Rock sampling, testing, and characterization -- 6.3 Conformance testing for construction monitoring and construction quality assurance -- References --
7. Application of site characterization to design -- 7.1 Introduction -- 7.2 Development of design parameters for static analyses -- 7.3 Seismic site characterization -- References --
8. Case histories -- 8.1 Introduction -- 8.2 Case history 1: site characterization for flood protection systems, before and after a failure -- 8.3 Case history 2: seismic site characterization, including postearthquake reconnaissance -- 8.4 Case history 3: geoenvironmental site characterization -- References --
9. Site investigation requirements -- 9.1 Site investigation requirements of building codes -- 9.2 Contents of a typical site characterization report -- References --
10. Ethical considerations in site characterization -- 10.1 Background -- 10.2 Contractual arrangement -- 10.3 Supervision -- 10.4 Transfer of project -- 10.5 Lapses and their consequence -- References --
Appendix A. Outline of geotechnical site characterization report --
Index.

Sommario/riassunto

The topic of site characterization is unique to geotechnical engineering and owes its significance directly to the variability of the natural geologic deposits on the earth's surface. Thus, soil found below the ground at any construction site is different from soil located at another site--even an adjacent site. Geotechnical site characterization methods are utilized to evaluate the properties of natural subsurface deposits, over which any structure is supported. Proper site characterization requires an understanding of various field and laboratory investigation methods. The book discusses the suitability of various methods under different site conditions and the procedures for interpreting test results to derive design parameters. Recent developments regarding specialized site characterization techniques (such as geophysical methods) and techniques suitable for specific purposes (such as seismic hazard evaluation) are also included. Three recent case histories are included, where site characterization played a key role. The three disparate cases provide a broad coverage between them, including soft natural soil under static loading, coarse and fine-grained soil under seismic impact, and hazardous waste deposits under both static and seismic loading. Site investigation requirements of building codes are discussed and guidelines for preparing a typical site characterization report are presented. A final section addresses various ethical issues that are unique to the practice of site characterization. The book is aimed at the practicing geotechnical engineer, as well as advanced undergraduate and graduate students.
