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Nota di contenuto	Drilling in Extreme Environments: Penetration and Sampling on Earth and other Planets; Foreword; Contents; Preface; List of Contributors; Acknowledgments; Color Plates; 1 Drills as Tools for Media Penetration and Sampling; 1.1 Introduction and Historical Perspective; 1.2 Methods of Drilling and Penetration of Objects; 1.2.1 Mechanical Techniques; 1.2.2 Thermal Techniques; 1.2.3 Chemical Techniques; 1.3 Types of Mechanical Drills; 1.3.1 Rotary Drill; 1.3.2 Hammer Drill; 1.3.3 Rotary-Hammer Drill; 1.4 Bits - the End-Effector of Drills; 1.4.1 Twist Drill Bits; 1.4.2 Gun Drill 1.4.3 Centering and Spotting Drill Bits1.4.4 Material Makeup of Bits; 1.5 Application of Drilling Techniques; 1.5.1 Geological Studies and Search

for Resources; 1.5.2 Mining and Tunneling; 1.5.3 Petroleum and Gas Drilling and Exploration; 1.5.4 Ocean and Seafloor Drilling; 1.5.5 Planetary Drilling and Sampling; 1.5.6 Ice Drilling; 1.5.7 Dental Drills; 1.6 Conclusion; References; 2 Principles of Drilling and Excavation; 2.1 Introduction; 2.2 Physical Properties of Rocks; 2.2.1 Terrestrial Rocks; 2.2.2 Extraterrestrial Rocks; 2.2.3 Influence Factors for Rock Mechanical Properties

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4.2.5 Hand Augers

## Sommario/riassunto

Uniquely comprehensive and up to date, this book covers terrestrial as well as extraterrestrial drilling and excavation, combining the technology of drilling with the state of the art in robotics. The authors come from industry and top ranking public and corporate research institutions and provide here real-life examples, problems, solutions and case studies, backed by color photographs throughout. The result is a must-have for oil companies and all scientists involved in planetary research with robotic probes. With a foreword by Harrison "Jack" Schmitt -- the first geologist to drill