LECTURE HIGHLIGHTS

The “working stress” design approach, based on an overall safety factor, has been used for many years. However, the more rigorous reliability-based design approach utilizes a target annual failure probability or target reliability index. The advantage: this approach explicitly reflects the uncertainty in the analysis parameters and their correlation.

This lecture presents concepts of reliability-based design, and the principles for managing risk and achieving robust geotechnical designs. Drawing from several practice-based case studies, Dr. Lacasse will illustrate the benefits of employing probabilistic and reliability-based methods. She will further outline the role of probabilistic and reliability-based analyses to support decision-making and risk management.

ABOUT THE SPEAKER

Dr. Suzanne Lacasse is the Technical Director of the Norwegian Geotechnical Institute. She gave the 37th ASCE Terzaghi Lecture on “Offshore Geotechnics,” the 55th ICE Rankine Lecture on “Hazard, Risk and Reliability in Geotechnical Practice,” and the 8th ISSMGE Terzaghi Oration on “Protecting Society from Landslides.” Dr. Lacasse was educated at Ecole Polytechnique of Montréal and MIT, and received PhDs Honoris Causa from the University of Dundee in Scotland, the Norwegian University of Science and Technology, and Université du Québec. She is a member of the National Academies of Engineers in the US, Canada, Norway, and France.