



American Society of Civil Engineers

North Jersey Branch

The Geotechnical Group Proudly Presents

BRIDGE SCOUR PREDICTIONS

Professor Jean-Louis BRIAUD

President of ISSMGE

Zachry Department of Civil Engineering

Texas A&M University

Why and how does a soil particle or block of soil particles erode away? How did the Colorado River dig the Grand Canyon, a 1600 m deep hole? How did the Niagara Falls regress 10 km? What soil properties are most influential in erosion resistance? How can one measure erodibility?

The research work leading to the equations to predict the depth of scour around bridge supports is described including large scale laboratory experiments and numerical simulations. Dimensional analysis is used to optimize the form of the equations which are presented including their advantages and limitations.

The equations are evaluated by comparing them to a number of databases of measured scour depths both in the field and in other laboratory studies. A number of case histories are presented to illustrate the application of the fundamental concepts to erosion studies including the Woodrow Wilson Bridge in Washington DC and the New Orleans levee failures.

Speaker: **Jean-Louis Briaud** received his Bachelor's degree from the Ecole Speciale des Travaux Publics in Paris in 1972, his Master's degree from the University of New Brunswick in 1974, and his Doctorate from the University of Ottawa in 1978. Professor Briaud currently is the Spencer J. Buchanan Chair in the Zachry Department of Civil Engineering.

Professor Briaud has published one book on the pressuremeter, edited six books, published close to 300 Journals articles, conference papers, and research reports. He has developed 13 software packages and 11 videotapes. He has chaired the organization of 3 international conferences and conducted many short courses and webinars on in situ testing, geotechnical engineering software, bridge scour, and shrink-swell soils. He has delivered over 150 lectures worldwide and is an international consultant on various topics including bridge scour, cliff erosion, slope stability, highway embankments, oil tank foundations, deep foundations, shallow foundations, docking facilities, tunnels, pressuremeter testing onshore and offshore.

For his innovative contributions in these various fields, Professor Briaud has received among other awards The ASCE Ralph B. Peck Lecture Award, the Canadian Geotechnical Society G. Geoffrey Meyerhof Award, the ASCE Martin Kapp Award, the ASCE Huber Research Prize, and the ASTM Hogentogler Award. He holds two formal patents and one commercial agreement.

In 2004, Professor Briaud became President of the American Association of Geotechnical Professors (USUCGER) which regroups about 500 professors in the USA and abroad. In 2008, Professor Briaud became President of the Geo-Institute (G-I) of the American Society of Civil

Engineers in the USA after serving several years on the G-I Board of Governors. Professor Briaud has been a member of ISSMGE since 1980 and was elected President of ISSMGE in October 2009 for 4 years.

Date/Time: **Wednesday, April 6, 2011.** Registration 5:30 pm, dinner and presentation to follow.

Location: La Quinta Inn, 38 Two Bridges Road (off Route 46W), Fairfield, NJ 07004

Cost: \$45 for ASCE member, \$50 for nonmembers, \$45 for Gov't Employees and \$20 for Full-Time Students with ID.

Register: **RSVP by April 1, 2011. Register on-line at www.ascenorthjerseybranch.org** or contact Robert Bunting at robert.bunting@aecom.com.

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