Professor Jean-Louis BRIAUD

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Professor Jean-Louis Briaud is a Distinguished Professor and Holder of the Spencer J. Buchanan Chair in the Zachry Department of Civil Engineering at Texas A&M University and a Professional Engineer. He received his Bachelor degree in France in 1972 and his Ph.D. degree from the University of Ottawa in Canada in 1979. His expertise is in foundation engineering and more generally geotechnical engineering. He has served as President of the Geo-Institute of ASCE, President of the International Society for Soil Mechanics and Geotechnical Engineering, and is the current President of the Federation of International Geoengineering Societies. Among other awards, he has received the ASCE Ralph Peck Award from the USA, the CGS Geoffrey Meyerhof Foundation Engineering Award from Canada, the Honorable Aitalyev Medal from Kazakhstan, and is a member of the National Academy of Natural Sciences in Russia. Over the last 30 years, Dr. Briaud has conducted about 10 million dollars of research most of which was on foundations and retaining walls. He has supervised 50 PhD students and 90 Master students. He is the author of a new book entitled Geotechnical Engineering and one entitled The Pressuremeter; he has published about 300 articles and reports in geotechnical engineering. He enjoys tennis, soccer, and rugby, and plays jazz piano at the amateur level.

CROSS USA LECTURE OF THE GEO-INSTITUTE OF ASCE

OBSERVATION METHOD FOR BRIDGE SCOUR AND MEANDER MIGRATION

One bridge collapses every ten days in the USA and 60 % of the time it is due to scour. Bridges are inspected every two years; those with foundations that are unstable for calculated and/or observed scour conditions are termed scour critical bridges. There are approximately 17,000 scour critical bridges in the United States. This lecture proposes a new bridge scour assessment method called the Observation Method for Scour (OMS). The proposed method does not require site specific erosion testing and accounts for time dependent scour in erosion resistant materials. The OMS makes use of charts that extrapolate or interpolate observed scour depths at the bridge to predict future scour depths. Ten case histories are presented.

River meanders migrate over time and the consequences of this migration can create a problem for bridges and embankments near the river. This is why it is important to predict the lateral extent of future migration over the life of neighboring infrastructure. In the observation method for meander migration (OMM), the past movement and velocity history of the meander are used to back-calculate site specific erosion parameters, then those parameters serve as input to predict the meander migration for a chosen future velocity hydrograph. Four case histories are presented.