Electrofacies Characterization and Permeability Predictions From Well Logs

Instructor: Dr. Akhil Datta-Gupta, Texas A&M University, USA

Course Description

This is a two-day course designed to cover techniques associated with the recognition, classification and prediction of electrofacies using well logs and the use of advanced regression techniques for building electrofacies-specific permeability correlations. The course will cover the practical aspects of multivariate statistical analysis of well logs to identify, characterize and predict electrofacies and recent developments in non-parametric regression techniques to build permeability correlations from well logs in geologically complex reservoirs. PC-based computer programs (EFACIES and GRACE) will be used to provide the participants hands on experience with the techniques using practical field examples. Participants are encouraged to bring their own data set for use during the course.

Specific topics covered will include: exploratory data analysis, data reduction and normalization techniques, cluster and discriminant analysis, data classification using electrofacies, lithofacies and hydraulic flow units, problems with conventional multiple regression for permeability correlations, non-parametric regression techniques and applications, relative importance of well logs in permeability correlation and the impact of missing well logs in permeability predictions.

Who Should Attend

The course is designed for practicing geoscientists and engineers. No formal training in statistics is required.

Instructor

Akhil Datta-Gupta is the Rob L. Adams Professor in Petroleum Engineering at Texas A&M U. in College Station, TX (USA). He holds a PhD in Petroleum Engineering from the U. of Texas at Austin and has worked with BP Exploration/Research and the Lawrence Berkeley National Laboratory. He is well-known throughout the industry for his contributions to reservoir characterization, development and application of 3D streamline simulation methods and dynamic data integration into reservoir models. He has over 60 publications in the related areas and was awarded the Lester C. Uren award (2003) by the Society of Petroleum Engineers for his contributions to Petroleum technology. He is an SPE distinguished member and a recipient of the AIME Rossitter W. Raymond award (1992) and SPE Cedric K. Ferguson Certificate (2000). He is also an SPE distinguished lecturer (1999-2000) and an SPE distinguished author (2000).