

Revised Rules of Procedure

February 18, 2005

Software ShootOut - 2006 / IDRC2006 / Wilson College, Chambersburg, PA

DATASETS

The datasets for 2006 (provided by David Brown, University of Montana, Bozeman, MT) comes from the Pedometrics (see the inset) field and was recorded with a FieldSpec Pro-FR

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The datasets are quite large, typical of datasets encountered in Pedometrics. There are 2,761 spectra in the calibration/prediction (CAL) set; 1423 spectra in the validation (VAL) set. The spectra come from soil samples collected from all over the USA.

CONSTITUENTS

There are eight (8) parameters associated with these data sets: (1) Kaolinite [KK], (2) Montmorillonite [MT], (3) Vermiculite [VR], (4) clay-size fraction (CL) [clay_g_kg], (5) cation exchange capacity (CEC) [cec_nh4], (6) inorganic carbon [IC_g_kg], (7) soil organic carbon (SOC) [SOC_g_kg], and (8) sand-size fraction [sand_g_kg]. The name in brackets are the column-names in both CAL and VAL data sets. [Please ignore the "calibration" column.] All eight parameter for each spectra in the CAL set are attached. Parameter values are NOT attached to the VAL set; these values are retained by the judges for evaluating contest entries.

ShootOut participants are to develop three calibrations, for parameters CL, CEC and SOC, using the CAL set and validate the calibrations by estimating the same three constituents in the VAL set. Participants may experiment with the other constituent data if they wish. However, the judges will

consider only calibrations for the above three parameters.

This year there will be four invited "gun slingers" with the remaining session time divided equally among the volunteer presentations. David Brown, will do an intro and wrap-up, discussing characteristics of the data as well as offering his own approach to calibration/prediction and validation.

Participants are to use the CAL set any way they choose. If they choose to have a prediction set, it should come from the CAL set.

PEDOMETRICS

"The application of mathematical and statistical methods for the study of the distribution and genesis of soils."

The Official Definition of Pedometrics: Adopted by Commission 1.5, Division 1, International Union of Soil Sciences (Pedometron, Issue 15, Dec. 2003).

OBJECTIVE

The objective of ShootOut2006 is to produce the "best calibration" possible for determining CL, CEC and SOC in the VAL set. Participants who wish to compete for prizes **must submit** their predictions (**by July 30, 2006**) in an EXCEL (*.xls) file to

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and

David Brown

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Criteria for deciding winners include: (1) Prediction statistics, (2) novelty, uniqueness and clarity of the presentation, (3) timing (staying within time assigned) and (4) software evaluation (why

you chose the software over other options). An audience vote will be taken and the results of this vote will be considered by the judges for determining the winners. Winners will be announced during the banquet on Thursday night. Prizes this year will be as follows: 1st Prize: \$200, 2nd Prize: \$100, 3rd Prize: \$50 and Consolation Prizes: \$20.

SUBMISSION DEAD LINE

Submissions received after July 30, 2006 will not be eligible for prizes. Decisions of the judges are final.

BIBLIOGRPHY

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4. Clark, R.N., G.A. Swayze, K. E. Livo, R.F. Kokaly, S.J. Sutley, J.B. Dalton, R.R. McDougal and C.A. Gent. 2003. Imaging spectroscopy: Earth and planetary . . . *Geophys.Res.-Planets* 108: E12.
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