

Updates and corrections as of 3/17/2010

1. In the original spreadsheet the Langmuir-Freundlich model (Eq. [2]) did not have the K value raised to the n power. The attached spreadsheet has corrected this.
2. There was a typo in the units with the Langmuir K parameter in the spreadsheet. The units should have read L/mg rather than L/kg when C is in mg/L. To avoid confusion, in the updated version the units have been removed since they are dependent on the units used for C and S.
3. We have recently shown that the traditional method of weighting data by the inverse of the variance in the dependent variable can lead to poorer parameter estimates and uncertainties than with unweighted least squares regression when applied to sorption data (C.H. Bolster and J. Tellinghuisen. 2010. On the Significance of Properly Weighting Sorption Data for Least-Squares Analysis. Soil Science Society of America 74:670-679). Therefore, the weighting option has been removed from the spreadsheet (3/2010). If weighting of data is needed, please contact me at carl.bolster@ars.usda.gov for a modified version of the spreadsheet.
4. w_i in the denominator in for calculating the model efficiency (Eq. [5]) of Bolster and Hornberger (2007 SSSAJ) should be outside of the parenthesis. (This only applies to weighted data and therefore is only relevant to the modified Langmuir equation spreadsheet)