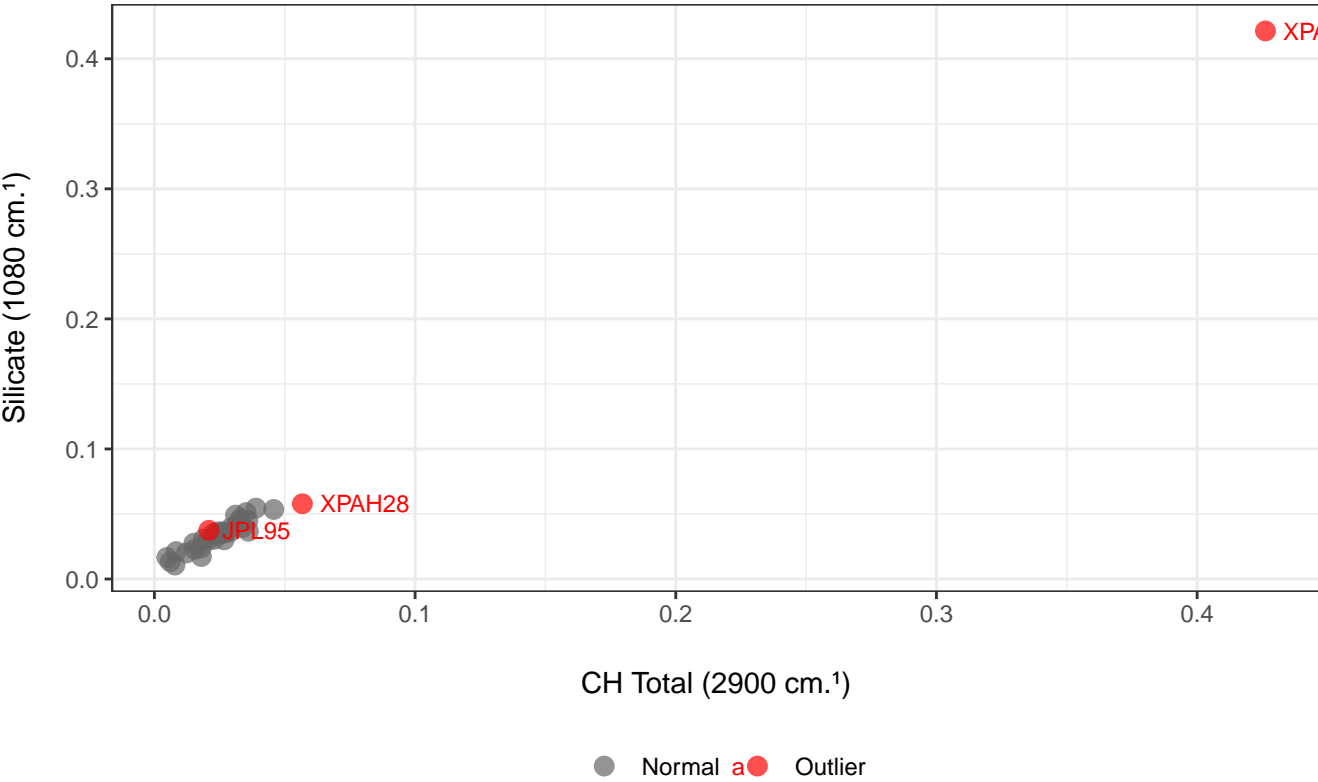


FTIR Diagnostic Analysis: Outliers, Multicollinearity, and Standardization

Evaluating proxy robustness and independence

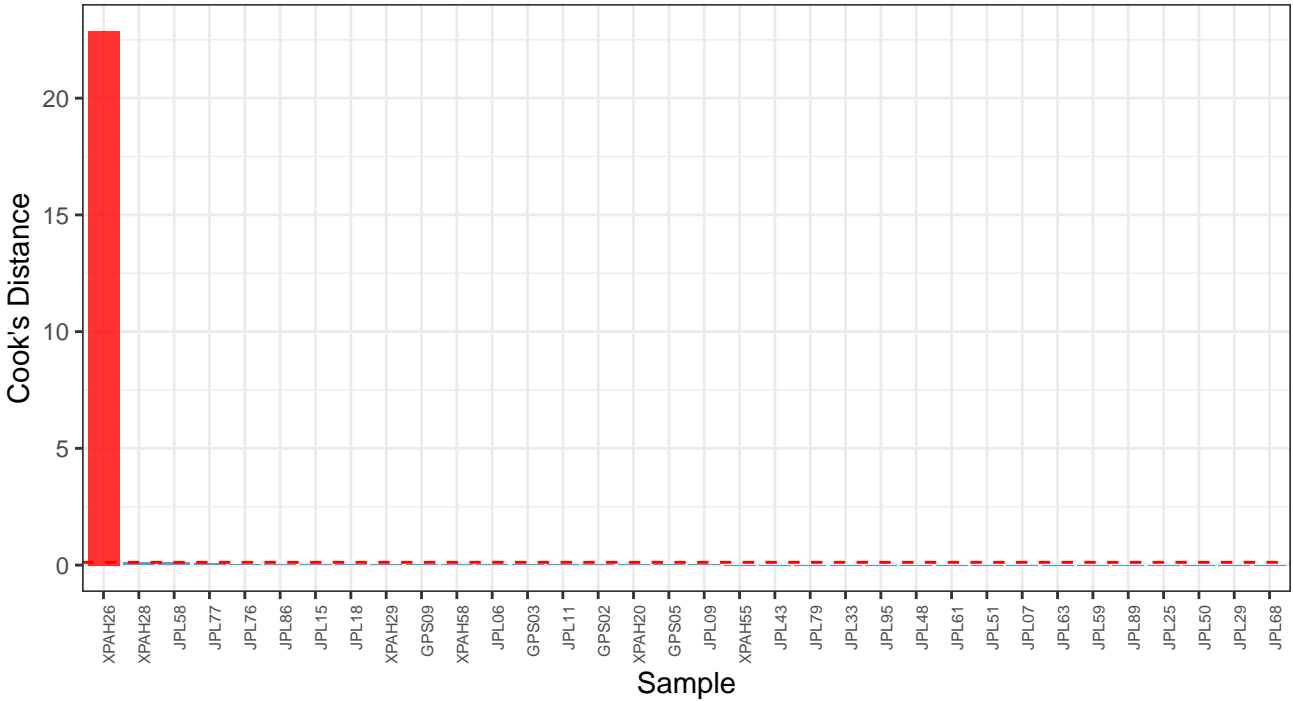
A) FTIR Proxy Distribution: C–H vs Silicate

Outliers identified by IQR and Cook's D



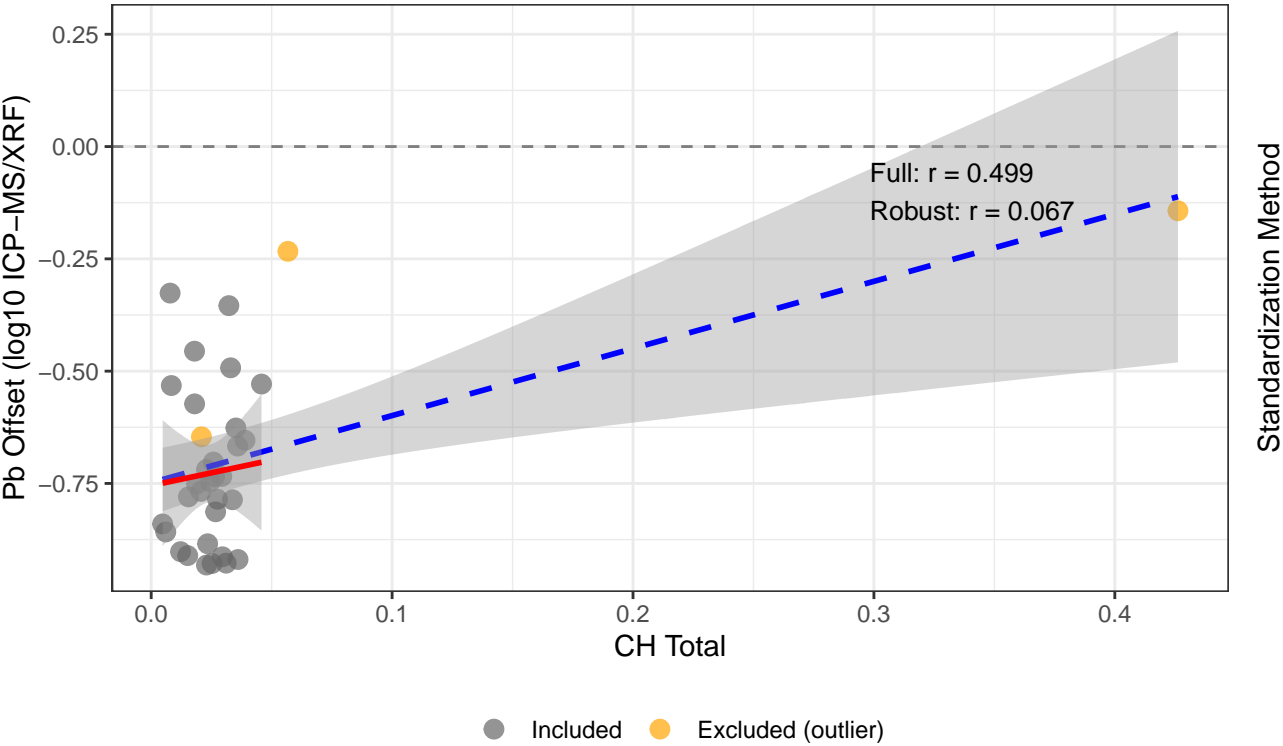
B) Cook's Distance: CH_{total} → Pb Offset

Threshold = 4/n = 0.118



C) Effect of Outliers on Correlation

Blue = Full data, Red = Outliers removed



D) Standardization Method Comparison

Correlation with Pb offset

