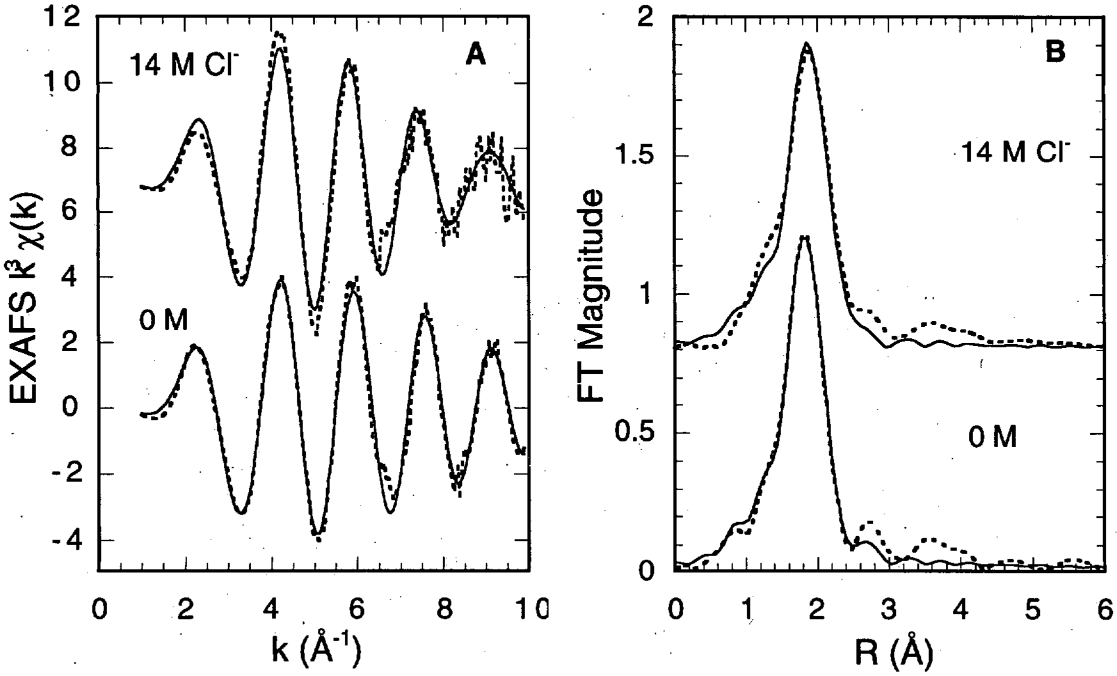


Figure A Raw Eu L_{II}-edge k^3-weighted EXAFS data (A) and corresponding Fourier transforms (B) taken over k=1–9.9 $Å^{-1}$ for Eu^{3+} in 0.2 and 14 M Cl^-. experimental data (—), theoretical fit (····).

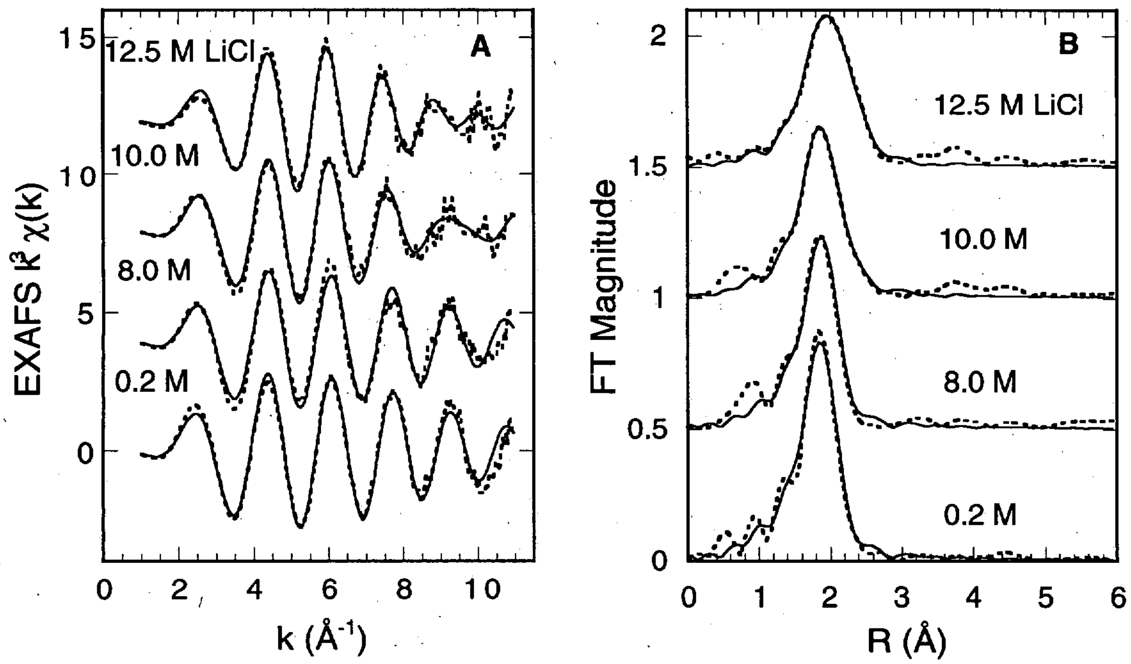
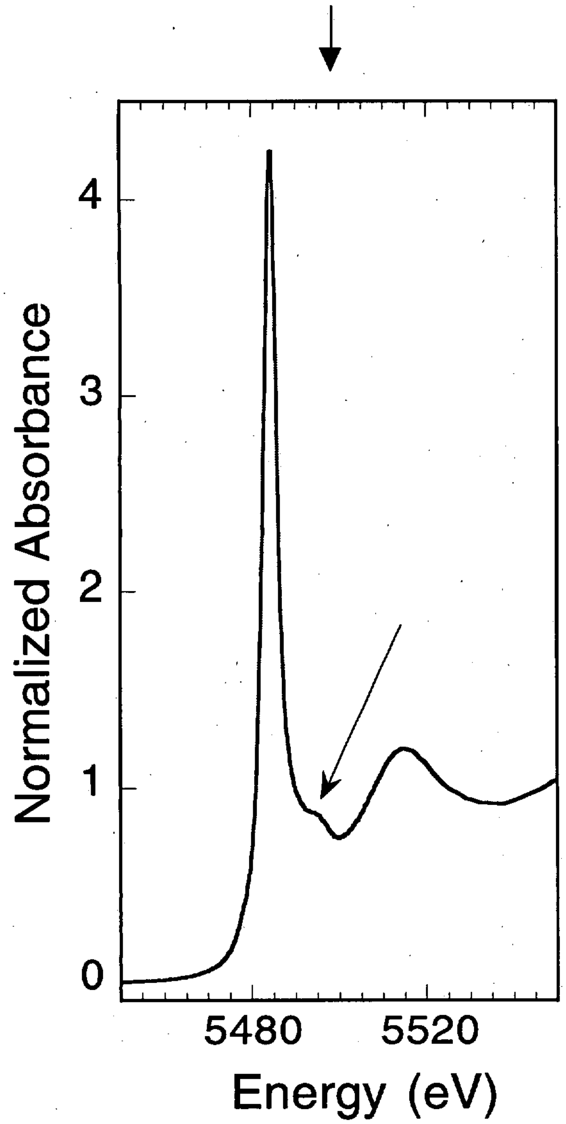
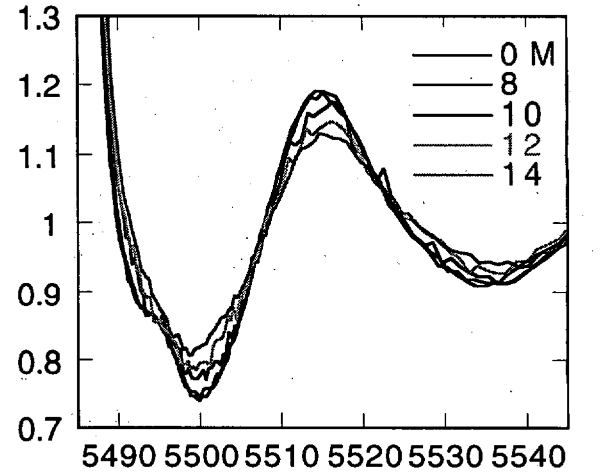


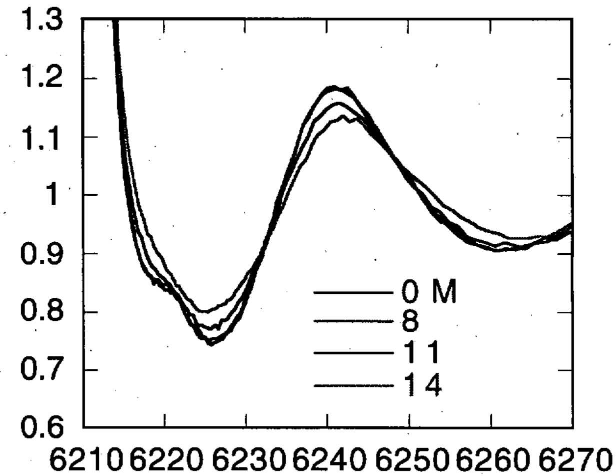
Figure B Raw Am L_{III}-edge k^3-weighted EXAFS data (A) and corresponding Fourier transforms (B) taken over k=1–11 $Å^{-1}$ for Am^{3+} as a function of [Cl^-]. experimental data (—), theoretical fit (····).

La L_3 XANES

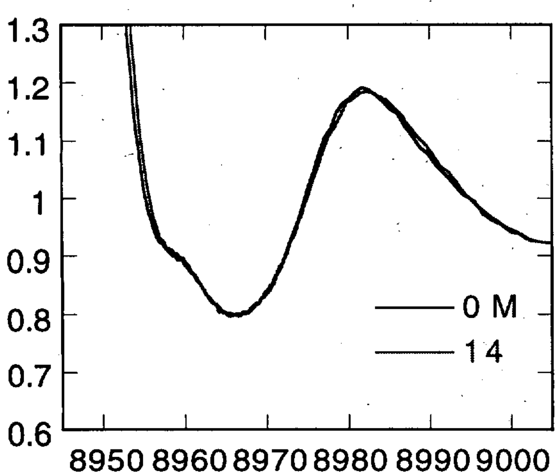




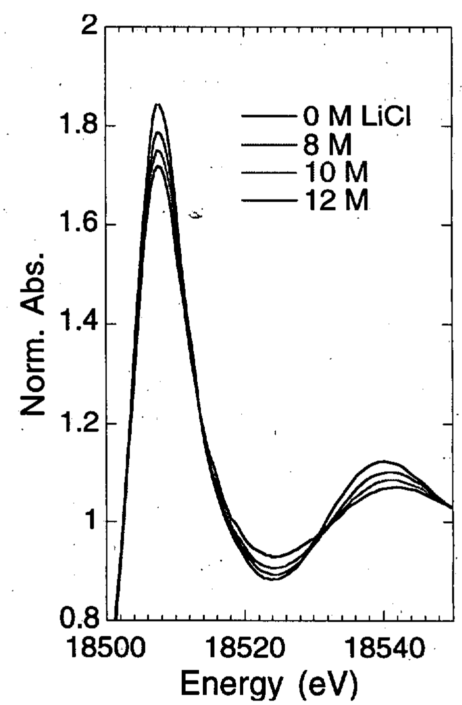
Nd L_3 XANES



Yb L_3 XANES

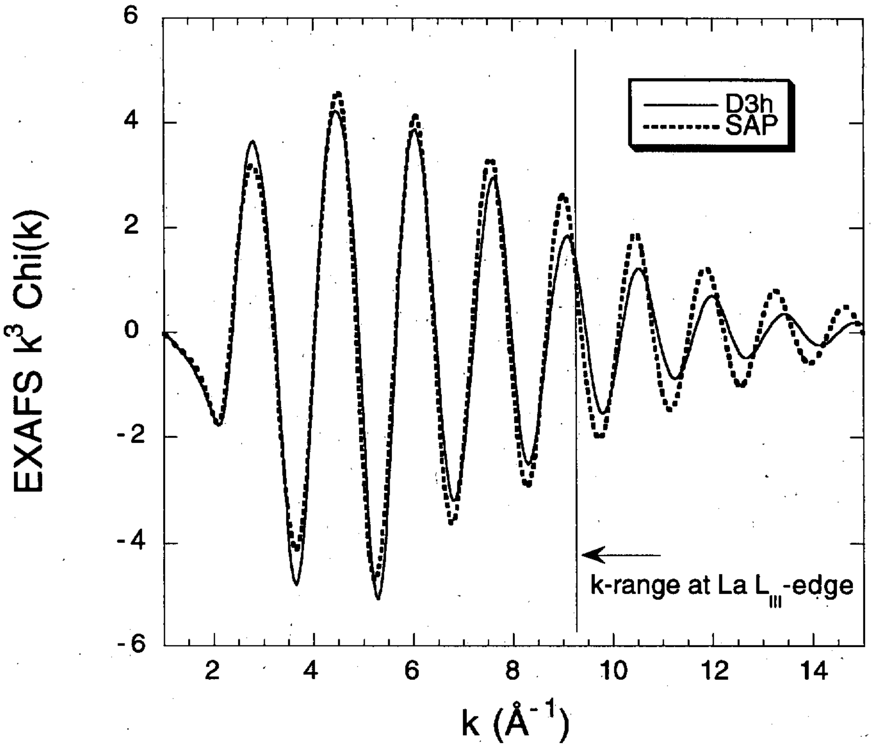


Am L_3 XANES

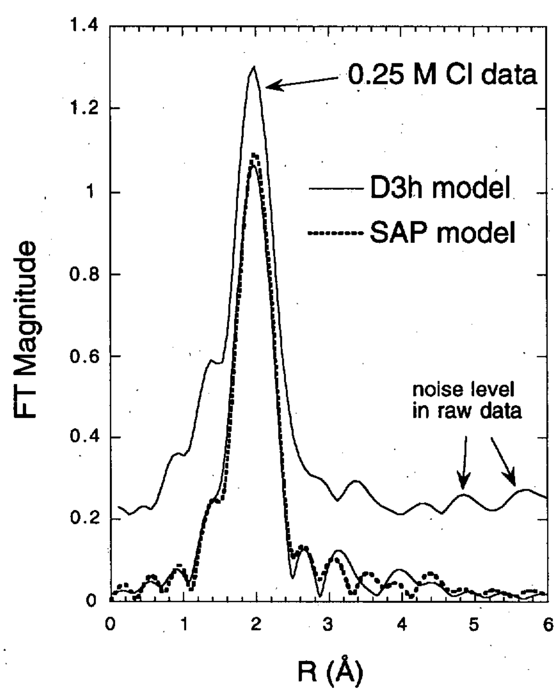


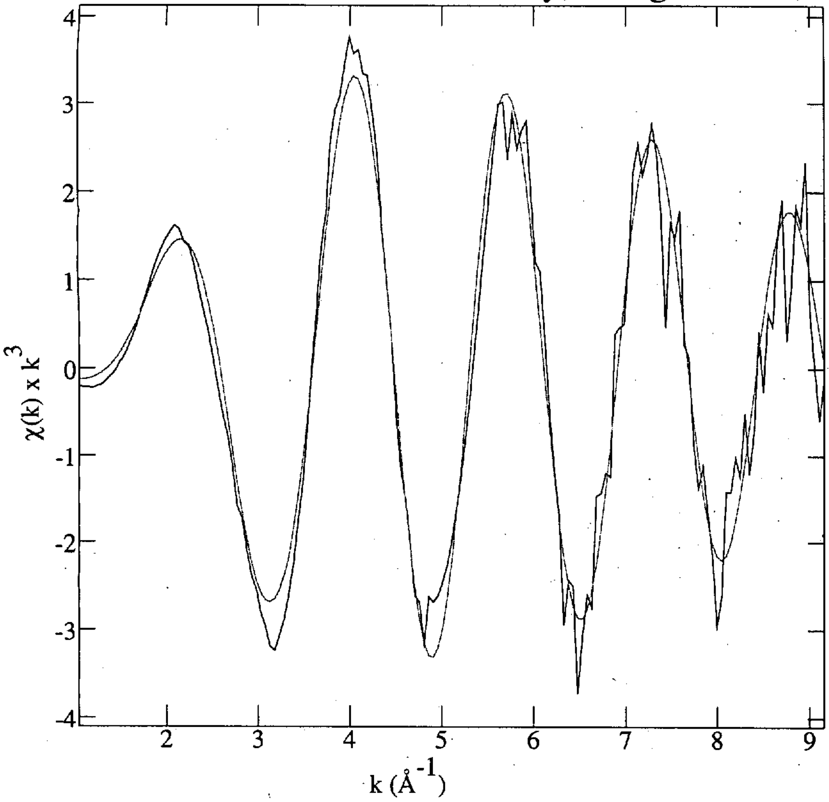
FEFF7 Modeling of La L_{III} EXAFS, Multiple Scattering Paths up to 8 legs included:

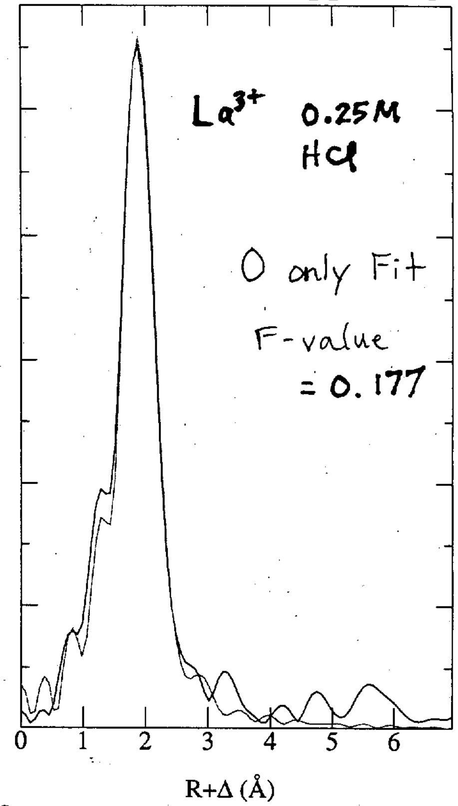
SAP=Square antiprism, 8 O at R=2.54 Å, σ^2=0.0065 Å^2
D3h=Tricapped trigonal prism, 6 O at R_1=2.51 Å, 3 O at R_2=2.61 Å, σ^2=0.0065 Å^2



Fourier Transforms of FEFF7 Models + La^{3+} aquo ion data.

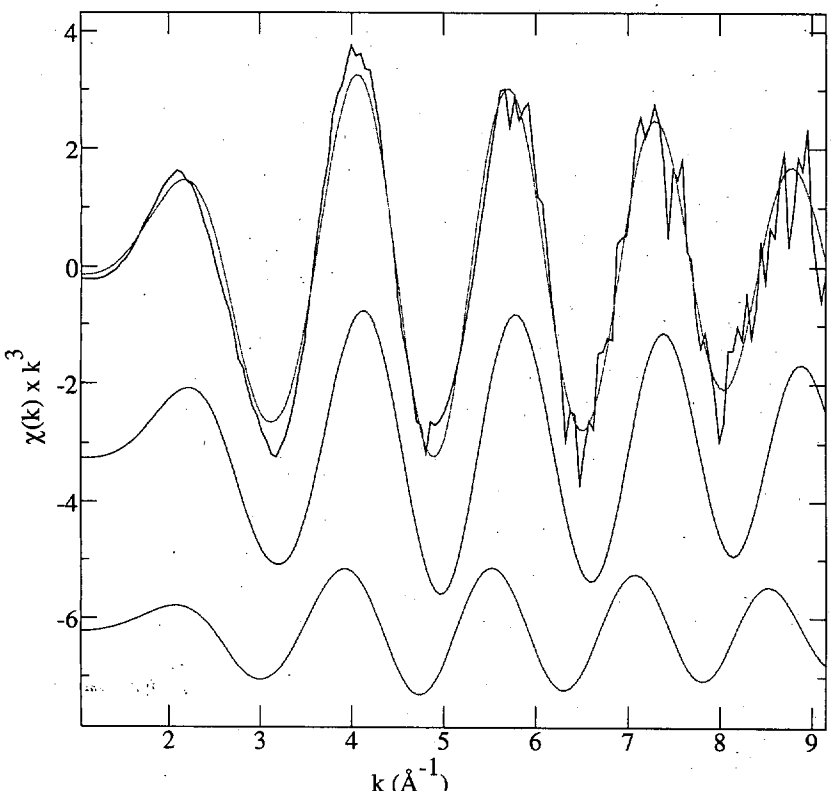


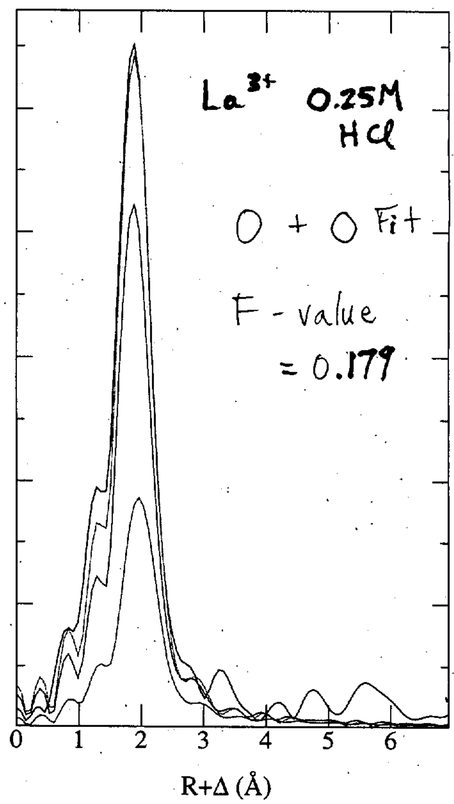




...... *N= 9.167 *R= 2.5429 .σ2= 0.00900 *Eo= -7.320 La-O

19-AUG-1999 13:32
LAL3_0

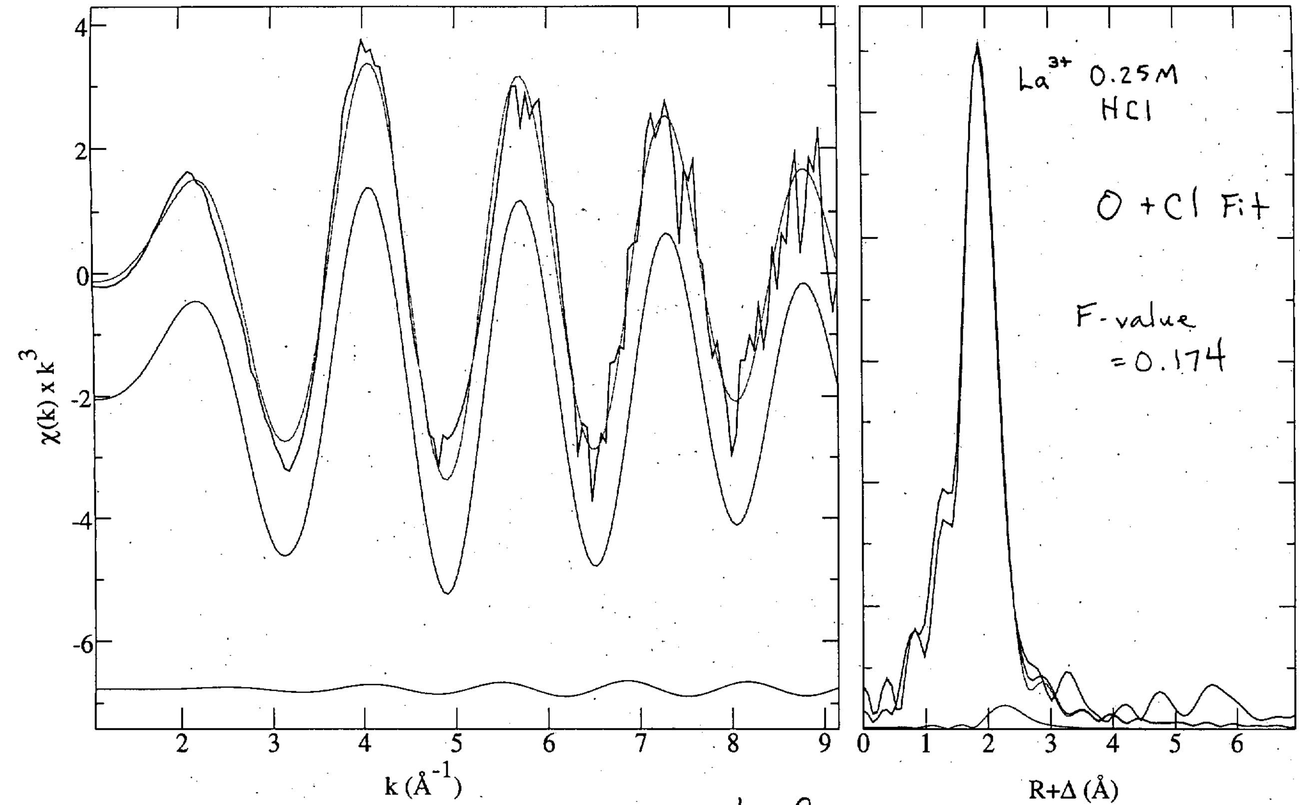




...... .N= 6.000 *R= 2.5188 *σ2= 0.00747 *Eo= -6.980 La-O_1
...... .N= 3.000 *R= 2.6074 /σ2= 0.00747 /Eo= -6.980 La-O_2

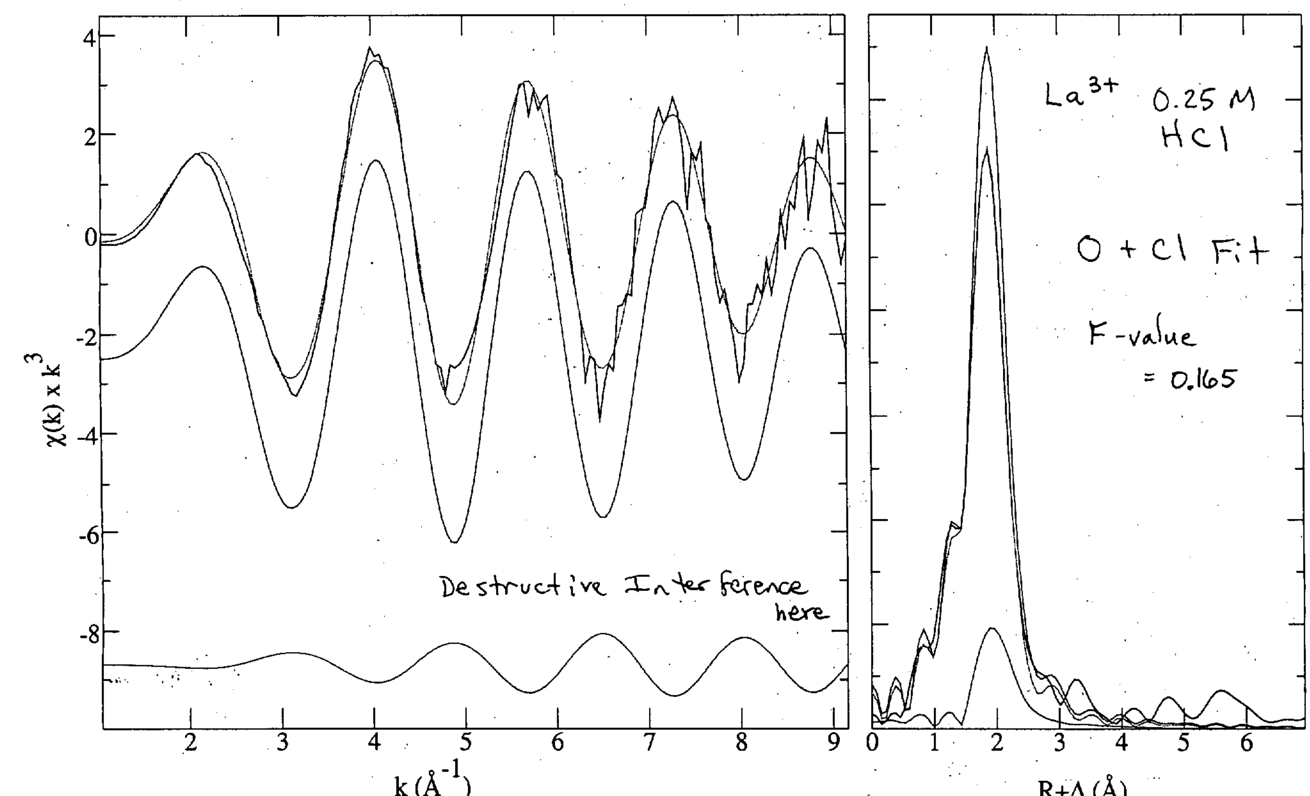
20-AUG-1999 14:31
LAL3_0

Equally Good Fits Obtained for $R_1 = 2.52$, $R_2 = 2.59$ or $R_1 = 2.54$, $R_2 = 2.55$ etc.



...... *N= 9.102 *R= 2.5420 .σ2= 0.00900 *Eo= -7.180 La-O
...... *N= 0.163 *R= 2.8779 .σ2= 0.00500 /Eo= -7.180 La-Cl

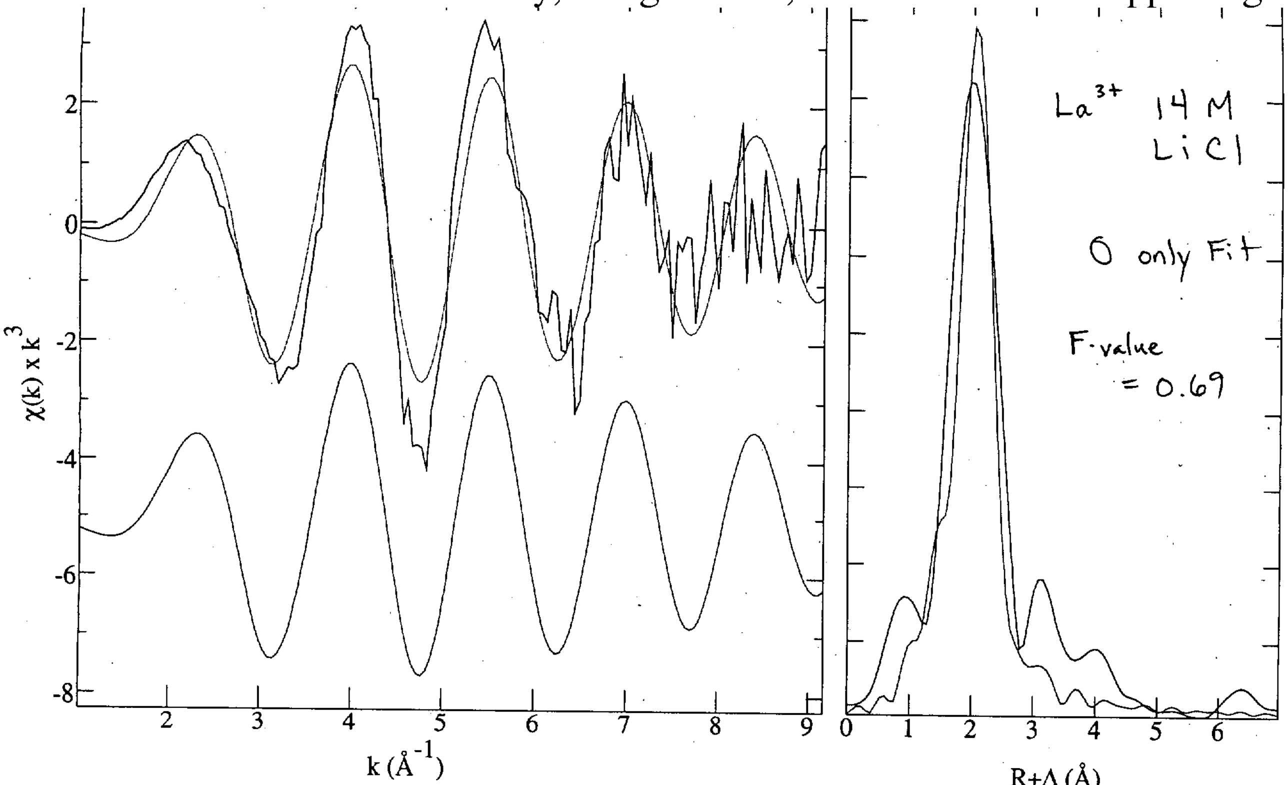
19-AUG-1999 12:13
LAL3_0



...... *N= 10.674 *R= 2.5448 .σ2= 0.00900 *Eo= -7.236 La-O
...... *N= 0.553 *R= 2.5303 .σ2= 0.00500 /Eo= -7.236 La-Cl

very short bond length

19-AUG-1999 12:08
LAL3_0



...... *N= 7.465 *R= 2.6651 .σ2= 0.00900 *Eo= -1.037 La - O

19-AUG-1999 12:26
LAL3_1

$N_O < 9$