Simulation Based on SRLS Model

Pruned Basis Sets

s9.ind → X-Band → x.run

s170.ind → 170-GHz → h.run

s9.ind → Multi-Frequency → xwh.run

s95.ind → Multi-Frequency → xwh.run
.run File No.1: To Simulate a Single X-Band Spectrum

log x

sites 1

let B0 = 3318

CARTESIAN g
let gxx, gyy, gzz = 2.00809, 2.00585, 2.00202

CARTESIAN A
let in2, Axx, Ayy, Azz = 2, 6.2, 4.3, 36.9

SPHERICAL W
let W1, W2, W3 = 0.65, 0, 0

SPHERICAL R0
let R0bar = 7.38

AXIAL R
let rprp, rpll = 8.57, 7.26

let c20, c22 = 2.1, -0.54

basis s9.ind

let nstep, cgtol, shiftr, shifti = 400, .100E-03, 0.5, 0.5

data x1 ascii nspline 512

fit

W1=1/3*(Wxx+Wyy+Wzz)
W2=Wzz-1/2*(Wxx+Wyy)
W3=Wxx-Wyy

fix all
let vary
fit
### .run File No.2: To Simulate a Single High-Field Spectrum

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>log h</td>
<td></td>
</tr>
<tr>
<td>sites 1</td>
<td></td>
</tr>
<tr>
<td>let B0 = 60935</td>
<td></td>
</tr>
<tr>
<td>CARTESIAN g</td>
<td></td>
</tr>
<tr>
<td>let gxx, gyy, gzz = 2.00809, 2.00585, 2.00202</td>
<td></td>
</tr>
<tr>
<td>CARTESIAN A</td>
<td></td>
</tr>
<tr>
<td>let in2, Axx, Ayy, Azz = 2, 6.2, 4.3, 36.9</td>
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</tr>
<tr>
<td>SPHERICAL W</td>
<td></td>
</tr>
<tr>
<td>let W1, W2, W3 = 2.6, 0, 0</td>
<td></td>
</tr>
<tr>
<td>SPHERICAL R0</td>
<td></td>
</tr>
<tr>
<td>let R0bar = 7.38</td>
<td></td>
</tr>
<tr>
<td>AXIAL R</td>
<td></td>
</tr>
<tr>
<td>let rprp, rpll = 8.57, 7.26</td>
<td></td>
</tr>
<tr>
<td>let c20, c22 = 2.1, -0.54</td>
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<tr>
<td>basis s170.ind</td>
<td></td>
</tr>
<tr>
<td>let nstep, cgtol, shiftr, shifti = 400, 0.100E-03, 0.5, 0.5</td>
<td></td>
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<tr>
<td>data h1 ascii nspline 512</td>
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</tr>
<tr>
<td>fit</td>
<td></td>
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</tbody>
</table>
.run File No.3 : To Simulate Multifrequency Spectra

log xwh

sites 1

series B0 = 3318 34003 60935
series LB = 0.65 1.8 2.6

CARTESIAN  g
let gxx, gyy, gzz = 2.00809, 2.00585, 2.00202

CARTESIAN  A
let in2, Axx, Ayy, Azz = 2, 6.2, 4.3, 36.9

SPHERICAL W
let W1, W2, W3 = 0, 0, 0

SPHERICAL R0
let R0bar = 7.38

AXIAL R
let rprp, rpll = 8.57, 7.26

let c20, c22 = 2.1, -0.54

basis s9.ind
basis s95.ind
basis s170.ind

let nstep, cgto1, shiftr, shifti = 400, .100E-03, 0.5, 0.5

data x1 ascii nspline 512
data w1 ascii nspline 512
data h1 ascii nspline 512

fit

let lb(1) = 0.7
vary lb(1)
log xwh

sites 2

series B0 = 3318 34003 60935
series LB = 0.9 1.8 3.2

CARTESIAN  g
let gxx, gyy, gzz = 2.00809, 2.00585, 2.00202

CARTESIAN  A
let in2, Axx, Ayy, Azz = 2, 6.2, 4.3, 36.9

SPHERICAL  W
let W1(1), W2(1), W3(1) = 0, 0, 0
let W1(2), W2(2), W3(2) = 0, 0, 0

SPHERICAL  R0
let R0bar = 7.12

AXIAL  R
let rprp(1), rpll(1) = 8.39, 7.2
let rprp(2), rpll(2) = 7.62, 7.4

let c20(1), c22(1) = 2.2, -0.5
let c20(2), c22(2) = 2.68, 1.0

basis s9.ind
basis s95.ind
basis s170.ind

let nstep, cgtol, shiftr, shifti = 400, .100E-03, 0.5, 0.5

data x2 ascii nspline 512
data w2 ascii nspline 512
data h2 ascii nspline 512

fit

 vary rprp(1)
 vary c20(2)

.run File No.4 : To Simulate Multifrequency Spectra with Multicomponent