

4.4. NEUTRON TECHNIQUES

Table 4.4.5.2. $\langle j_0 \rangle$ form factors for 4d atoms and their ions

Atom or ion	<i>A</i>	<i>a</i>	<i>B</i>	<i>b</i>	<i>C</i>	<i>c</i>	<i>D</i>	<i>e</i>
Y	0.5915	67.608	1.5123	17.900	-1.1130	14.136	0.0080	0.3272
Zr	0.4106	59.996	1.0543	18.648	-0.4751	10.540	0.0106	0.3667
Zr ⁺	0.4532	59.595	0.7834	21.436	-0.2451	9.036	0.0098	0.3639
Nb	0.3946	49.230	1.3197	14.822	-0.7269	9.616	0.0129	0.3659
Nb ⁺	0.4572	49.918	1.0274	15.726	-0.4962	9.157	0.0118	0.3403
Mo	0.1806	49.057	1.2306	14.786	-0.4268	6.987	0.0171	0.4135
Mo ⁺	0.3500	48.035	1.0305	15.060	-0.3929	7.479	0.0139	0.3510
Tc	0.1298	49.661	1.1656	14.131	-0.3134	5.513	0.0195	0.3869
Tc ⁺	0.2674	48.957	0.9569	15.141	-0.2387	5.458	0.0160	0.3412
Ru	0.1069	49.424	1.1912	12.742	-0.3176	4.912	0.0213	0.3597
Ru ⁺	0.4410	33.309	1.4775	9.553	-0.9361	6.722	0.0176	0.2608
Rh	0.0976	49.882	1.1601	11.831	-0.2789	4.127	0.0234	0.3263
Rh ⁺	0.3342	29.756	1.2209	9.438	-0.5755	5.332	0.0210	0.2574
Pd	0.2003	29.363	1.1446	9.599	-0.3689	4.042	0.0251	0.2453
Pd ⁺	0.5033	24.504	1.9982	6.908	-1.5240	5.513	0.0213	0.1909

Table 4.4.5.3. $\langle j_0 \rangle$ form factors for rare-earth ions

Ion	<i>A</i>	<i>a</i>	<i>B</i>	<i>b</i>	<i>C</i>	<i>c</i>	<i>D</i>	<i>e</i>
Ce ²⁺	0.2953	17.685	0.2923	6.733	0.4313	5.383	-0.0194	0.0845
Nd ²⁺	0.1645	25.045	0.2522	11.978	0.6012	4.946	-0.0180	0.0668
Nd ³⁺	0.0540	25.029	0.3101	12.102	0.6575	4.722	-0.0216	0.0478
Sm ²⁺	0.0909	25.203	0.3037	11.856	0.6250	4.237	-0.0200	0.0408
Sm ³⁺	0.0288	25.207	0.2973	11.831	0.6954	4.212	-0.0213	0.0510
Eu ²⁺	0.0755	25.296	0.3001	11.599	0.6438	4.025	-0.0196	0.0488
Eu ³⁺	0.0204	25.308	0.3010	11.474	0.7005	3.942	-0.0220	0.0356
Gd ²⁺	0.0636	25.382	0.3033	11.212	0.6528	3.788	-0.0199	0.0486
Gd ³⁺	0.0186	25.387	0.2895	11.142	0.7135	3.752	-0.0217	0.0489
Tb ²⁺	0.0547	25.509	0.3171	10.591	0.6490	3.517	-0.0212	0.0342
Tb ³⁺	0.0177	25.510	0.2921	10.577	0.7133	3.512	-0.0231	0.0512
Dy ²⁺	0.1308	18.316	0.3118	7.665	0.5795	3.147	-0.0226	0.0315
Dy ³⁺	0.1157	15.073	0.3270	6.799	0.5821	3.020	-0.0249	0.0146
Ho ²⁺	0.0995	18.176	0.3305	7.856	0.5921	2.980	-0.0230	0.1240
Ho ³⁺	0.0566	18.318	0.3365	7.688	0.6317	2.943	-0.0248	0.0068
Er ²⁺	0.1122	18.122	0.3462	6.911	0.5649	2.761	-0.0235	0.0207
Er ³⁺	0.0586	17.980	0.3540	7.096	0.6126	2.748	-0.0251	0.0171
Tm ²⁺	0.0983	18.324	0.3380	6.918	0.5875	2.662	-0.0241	0.0404
Tm ³⁺	0.0581	15.092	0.2787	7.801	0.6854	2.793	-0.0224	0.0351
Yb ²⁺	0.0855	18.512	0.2943	7.373	0.6412	2.678	-0.0213	0.0421
Yb ³⁺	0.0416	16.095	0.2849	7.834	0.6961	2.672	-0.0229	0.0344

Table 4.4.5.4 $\langle j_0 \rangle$ form factors for actinide ions

Ion	<i>A</i>	<i>a</i>	<i>B</i>	<i>b</i>	<i>C</i>	<i>c</i>	<i>D</i>	<i>e</i>
U ³⁺	0.5058	23.288	1.3464	7.003	-0.8724	4.868	0.0192	0.1507
U ⁴⁺	0.3291	23.548	1.0836	8.454	-0.4340	4.120	0.0214	0.1757
U ⁵⁺	0.3650	19.804	3.2199	6.282	-2.6077	5.301	0.0233	0.1750
Np ³⁺	0.5157	20.865	2.2784	5.893	-1.8163	4.846	0.0211	0.1378
Np ⁴⁺	0.4206	19.805	2.8004	5.978	-2.2436	4.985	0.0228	0.1408
Np ⁵⁺	0.3692	18.190	3.1510	5.850	-2.5446	4.916	0.0248	0.1515
Np ⁶⁺	0.2929	17.561	3.4866	5.785	-2.8066	4.871	0.0267	0.1698
Pu ³⁺	0.3840	16.679	3.1049	5.421	-2.5148	4.551	0.0263	0.1280
Pu ⁴⁺	0.4934	16.836	1.6394	5.638	-1.1581	4.140	0.0248	0.1242
Pu ⁵⁺	0.3888	16.559	2.0362	5.657	-1.4515	4.255	0.0267	0.1287
Pu ⁶⁺	0.3172	16.051	3.4654	5.351	-2.8102	4.513	0.0281	0.1382
Am ²⁺	0.4743	21.776	1.5800	5.690	-1.0779	4.145	0.0218	0.1253
Am ³⁺	0.4239	19.574	1.4573	5.872	-0.9052	3.968	0.0238	0.1054
Am ⁴⁺	0.3737	17.862	1.3521	6.043	-0.7514	3.720	0.0258	0.1113
Am ⁵⁺	0.2956	17.372	1.4525	6.073	-0.7755	3.662	0.0277	0.1202
Am ⁶⁺	0.2302	16.953	1.4864	6.116	-0.7457	3.543	0.0294	0.1323
Am ⁷⁺	0.3601	12.730	1.9640	5.120	-1.3560	3.714	0.0316	0.1232