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Z DEPENDENCE OF GF VALUES

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In the 1980s I worked on the beryllium sequence calculating energies, gf values and ionisation cross sections as part of the Opacity Project (J.Phys.B 23, 3811, 1990). The OP codes assumed LS coupling and on comparing gf values for Be-like ions with Fawcett's results (ADNDT 30, 1-26, 1984) I noticed some striking differences which are mentioned in the paper by Seaton et al. (Rev. Mexicana Astron. Astrof., 23, 19-23, 1992). There it is suggested that this is the result of relativistic effects which Fawcett took account of. Recently I noticed the curious way in which some of Zhang and Sampson's gf values behave for neon-like ions (ADNDT 43, 1-69, 1989). Their paper provides an explanation for this curious Z dependence of some gf values, and this is made possible since Zhang and Sampson's Table III lists gf values for 71 ions with Z=22 to Z=92. I planned to redo the work of 1990 taking account of relativistic effects and am in the process of completing this.