HIGH RESOLUTION SPECTRUM FOR THE A $^1\Sigma_u^+$–X $^1\Sigma_g^+$ SYSTEM OF LITHIUM ISOTOPOMERS

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On combining our over 40 vibrational bands for the A $^1\Sigma_u^+$–X $^1\Sigma_g^+$ system of $^6Li_2$ and $^{6,7}Li_2$ sub-Doppler polarization spectrum with literature data from the Fourier transform spectrum of this system for $^7Li_2$,[a] we have determined a new set of Le Roy - type molecular constants,[b] which include mass-reduced Dunham constants and Born-Oppenheimer and JWKB breakdown (BOB) correction terms, describing these two electronic states of all three isotopomers. The preliminary results indicate that the BOB corrections are not significant for the X $^1\Sigma_g^+$ state, but *are* significant for A $^1\Sigma_u^+$ state.

[a] Linh D. Le and R.A. Bernheim, "Atlas of the Absorption Spectrum of $^6Li_2$ and $^7Li_2$."

[b] R.J. Le Roy, paper FB09 at the "52nd Ohio State University International Symposium on Molecular Spectroscopy", Columbus, Ohio (1997); manuscript in preparation.