Spectroscopy of $^{11}_ΛB$\(^1\) JOHN MILLENER, Brookhaven National Laboratory — Hypernuclear γ-ray transitions in $^7_ΛLi$, $^9_ΛBe$, $^{10}_ΛB$, $^{11}_ΛB$, $^{15}_ΛN$, and $^{16}_ΛO$ have been studied with the Hyperball Ge array in a series of experiments at KEK and BNL. Comparison of the observed transition energies with shell-model calculations using a basis of Λ and Σ states with the hyperon in the lowest s orbit have led to a determination of the strengths of the spin-spin, spin-orbit, antisymmetric spin-orbit, and tensor components of the ΛN effective interaction from the data on $^7_ΛLi$, $^9_ΛBe$, and $^{16}_ΛO$. Here, the strength of the Λ-Σ coupling (essentially an effective central ΛN-ΣN interaction) has been fixed by theory and other data but it could be varied. The observed transitions in other hypernuclei then serve as consistency checks on the parametrization of the YN interaction. Specifically, six transitions in $^{11}_ΛB$ have been observed and their interpretation will be discussed.

\(^1\)Work supported by the US DOE under Contract No. DE-AC02-CH10886