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New sum rules for the spin dependent structure functions g_1 KORETUNE SUSUMU, Shimane University — Sum rules for the spin dependent structure function g_1 derived from the canonical quantization on the null plane have been regularized and transformed to the ones which are mainly concerned with the low energy quantities. These sum rules are related to the cross section of the photoproductions. Through these sum rules, it is discussed that there is a deep connection between the elastic and the resonance contributions, and that it is this relation which explains why the sign change discussed by the Drell-Hern-Gerasimov sum rule and Ellis-Jaffe sum rule occurs in the very small Q^2 region. Thus the sum of these contributions can be related to the high energy behavior.

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