

ON THE SENSITIVITY OF SPIN OBSERVABLES TO THE  
 RESONANCES IN PROTON-PROTON SYSTEM AT  $90^\circ_{\text{cm}}$

A. Švarc, Ž. Bajzer and M. Furić  
 Ruder Bošković Institute, Zagreb, Yugoslavia  
 Prirodoslovno-matematički fakultet, Zagreb, Yugoslavia

The study of excitation functions for spin-dependent observables ( $\Delta\sigma_L$ ,  $\Delta\sigma_T$ ,  $A_{LL}(90^\circ_{\text{cm}})$ ,  $A_{NN}(90^\circ_{\text{cm}})$ ) has revealed significant structures in the region of incident momenta from 1 to 3 GeV/c. The explanation of these structures is still uncertain [1] although there are some attempts to understand it in terms of dibaryon resonances. Recently we have suggested [2] the exact amplitude analysis at  $90^\circ_{\text{cm}}$  as a helpful method for studying this problem. Only three helicity amplitudes exist at  $90^\circ_{\text{cm}}$ . Five experiments are, therefore needed to determine the amplitudes completely and only three to determine their absolute values. Using the decomposition of the singlet and triplet-odd amplitudes at  $90^\circ_{\text{cm}}$  on the resonant and non-resonant part we investigate the influence of the resonance on the amplitude absolute values. Since the spin correlation parameters at  $90^\circ_{\text{cm}}$  are determined by the absolute values of the singlet and triplet amplitudes we are able to search for the most sensitive parameter to the dibaryon resonance. We found that the excitation function for  $A_{LL}(90^\circ_{\text{cm}})$  is especially sensitive to the presence in both the singlet and triplet-odd case in the region between 1 and 2 GeV/c of incident proton momentum.

- [1] D. Bugg, Rapporteur's Talk at the 9-ICOHEPANS, Versailles France, 6-10 July 1981.  
 [2] A. Švarc, Ž. Bajzer, M. Furić, Nucl. Phys. A370 (1981) 468.