

Peran resonans hyperon dalam photoproduksi kaon pada nukleon = Role of hyperon resonances in kaon photoproduction off the nucleon

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Abstrak

Proses photoproduksi kaon +p ! K++ dianalisis dengan menggunakan metode Lagrangian efektif. Dengan mencocokkan kopling konstant terhadap data eksperimen melalui prosedur sistematik sebuah model fenomenologis sederhana yang telah dibuat. Data eksperimen yang dipakai adalah penampang lintang diferensial, polarisasi tunggal dan polarisasi ganda. Peran resonans hyperon dalam proses photo produksi kaon juga diselidiki. Dalam literatur, resonans ini di klaim memiliki efek yang signifikan dalam photoproduksi kaon. Penelitian ini menunjukkan bahwa beberapa resonans hyperon bisa meningkatkan kesesuaian antara model perhitungan dan data eksperimen.

.....Kaon photoproduction process + p ! K+ + has been analyzed by using an effective Lagrangian method. By fitting the unknown coupling constants at hadronic vertices to experimental data through a systematic procedure, a simple but powerful phenomenological model which can nicely reproduce all experimental data has been constructed. To this end, we have used experimental data on differential cross section, single, and double polarization observables. We have also investigated the role of hyperon resonances in the kaon photoproduction process. In the literature these resonances have been claimed to have substantial effects in kaon photoproduction. In our study we found that certain hyperon resonances can significantly improve the agreement between model calculation and experimental data.