

Baryon Resonances and Strong Decays

W. Plessas (Institute of Physics, University of Graz, Austria)

Latest results from a study of baryon ground and resonant states within relativistic constituent quark models are reported. After a short review of the ground-state properties, notably of the nucleon and hyperon electromagnetic structure, strong resonance decays are addressed. The covariant predictions for pion, eta, and kaon partial decay widths by two kinds of constituent quark models are presented for the established light and strange baryon resonances below 2 GeV. The results exhibit a characteristic pattern that is distinct from nonrelativistic or relativized studies performed so far. Together with a detailed analysis of the spin, flavor, and spatial structures of the wave functions, it supports a new and extended classification scheme of baryon ground and resonant states into SU(3) flavor multiplets.