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Dynamics of Heavy Quarks in the Heavy Baryon Spectrum

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Recent developments in hadron spectroscopy bring novel ideas and pictures to structures and dynamics of quarks in hadrons. I overview recent achievements in the baryon spectroscopy, and further focus the discussion on heavy quark baryons and their excited states.

The heavy quarks have masses much higher than the QCD energy scale, $\Lambda_{\rm QCD}$. This hierarchy brings new features and symmetry of heavy hadrons, containing one or more heavy quarks. We study manifestations of heavy quark dynamics and symmetry in the spectrum of the heavy baryons, in particular the charmed baryons. It is found that the characteristic excitation patterns are observed and the spectra and decays of the excited states will give us much information on the dynamics of both the heavy and light quarks. Relation to the strange baryon spectrum is also discussed.