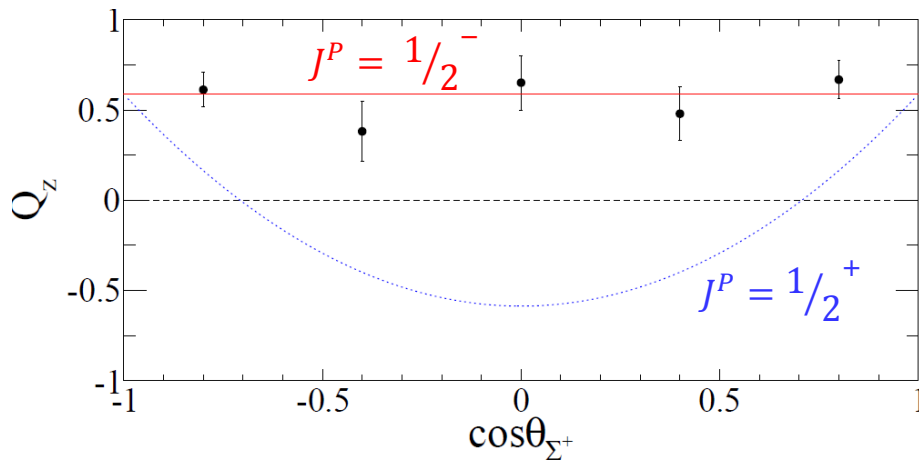
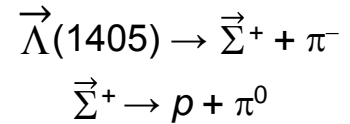
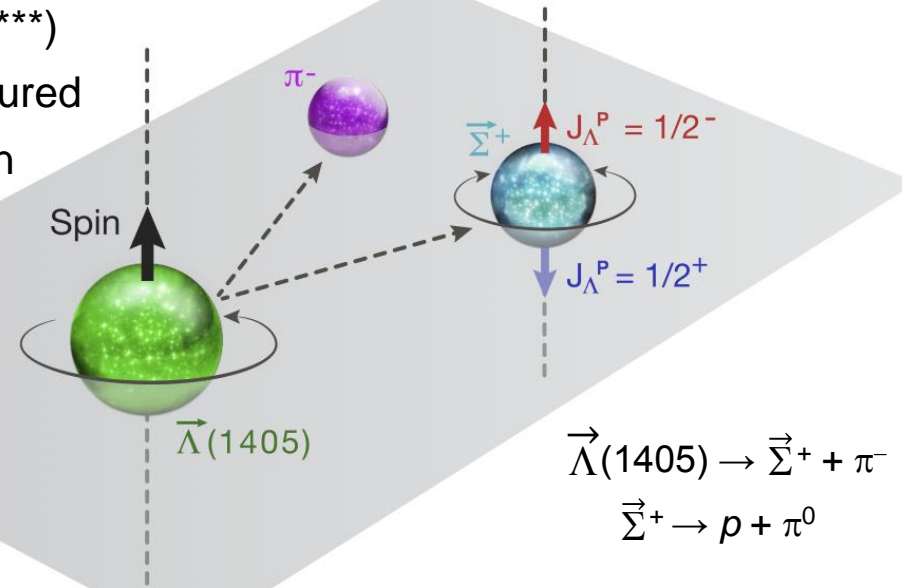
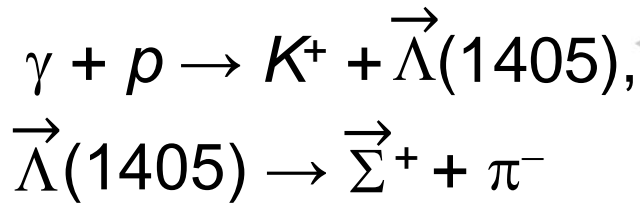


# Spin and Parity of the $\Lambda(1405)$ Baryon

- $\Lambda(1405)$  is a well-known hyperon (PDG Status: \*\*\*\*)
- Spin-Parity,  $J^P$ , has never been definitively measured
- $\Lambda(1405)$  created polarized via photoproduction in liquid hydrogen & detected in CLAS



- Isotropic decay of  $\Lambda(1405)$  is consistent with spin  $J = 1/2$
- Polarization transfer to  $\Sigma^+$  direction reveals  $J^P = 1/2^-$  vs.  $J^P = 1/2^+$
- Quark model expectation confirmed
- Higher spins are disfavored by the data and by theoretical expectations

K. Moriya, R. A. Schumacher *et al.* (CLAS Collaboration),  
 "Spin and Parity Measurement of the  $\Lambda(1405)$  Baryon." *Phys. Rev. Lett.* **112** 082004 (2014).