First thoughts on the Angular Analysis section

Georges Vasseur

CEA, IRFU, SPP, Saclay

3rd Physics of the B-factories workshop

Mainz, October 1st, 2010

Manpower

- Nobody until recently.
- I have just committed to be section editor for the angular analysis section.
- No other contributor yet.

Section layout

- Helicity formalism.
  - Introduction, helicity angles definition, dependence of the decay rate on helicity angles in different cases (VV, VT, VA, AA, …).
- Experimental effects.
  - e.g. helicity angle dependent efficiency.
- Angular fits.
  - Dedicated / included into global fit.
  - Partial / full angular analysis.
- Length of the section: about 8 pages.

Some relevant physics channels

- B decays with charm:
  - $J/\psi\ K^*$, $\psi(2S)\ K^*$, $\chi_{c1}\ K^*$.
  - $D^*\ \rho$, $D^*\ K^*$, $D^*\ D^*$, $D^*\ D^*_s$.
- Charmless B decays:
  - $\rho\ \rho$, $\omega\rho$, $\phi\ K^*$, $\rho\ K^*$, $\omega\ K^*$, $K^*\ K^*$, $a_1\ a_1$.
- (Semileptonic B decays:
  - $K^* l\ l$.)

Inter-relations

- Physics section:
  - Charmed and charmless B decays, CKM angles, ...
  - Discuss only features common to several analyses.
- Tools and methods:
  - Maximum likelihood fits.
  - Dalitz analysis.
  - Discuss only angular part.

To do

- And now starts the real work …