- ✓ Vary diamond
- ✓ Difference Acceptance
- ➢ radiative correction
- ✓ Mm range

- Rerun SIMC
  - ❑ Vary ebeam, angle
  - ❑ Kaon decay

❑model dependence → should only do after fixing best model param.

Kaon Decay

```
C Generate center/mass decay angles and momenta.
      rph = grnd()*2.*pi
      rth1 = grnd()*2.-1.
      rth = acos(rth1)

      pr = 0.
      m_final = Mmu ! default
      if(abs(sqrt(m2) - Mpi).lt.2) pr = 29.783 ! pi
      if(abs(sqrt(m2) - Mk).lt.2) then ! kaons
        if(grnd().lt.0.7) then ! decay to muon plu
       pr = 235.5
        else     ! decay to two pions
       pr = sqrt(Mk**2 / 4. - Mpi**2)
       m_final = Mpi
        endif
      endif
      if(pr.eq.0.) then
       write(6,'(''error, cannot decay particle wit
     >      '' mass='',f8.2)') sqrt(m2)
       stop
      endif
      er = sqrt(m_final**2 + pr**2)
      pxr = pr*sin(rth)*cos(rph)
      pyr = pr*sin(rth)*sin(rph)
      pzr = pr*cos(rth)
      m2 = m_final**2 !need mass-squared for multip
      Mh2_final = m2  !for ntuple
```

Decay channel	Branching ratio
$K^+ \rightarrow \mu^+ + \nu_\mu$	63.55%
$K^+ \rightarrow \pi^+ + \pi^0$	20.66%
$K^+ \rightarrow e + \pi^0 + \nu_e$	5.07%
$K^+ \rightarrow \mu^+ + \pi^0 + \nu_\mu$	3.353%
$K^+ \rightarrow \pi^+ + \pi^+ + \pi^-$	5.59%
$K^+ \rightarrow \pi^+ + \pi^0 + \pi^0$	1.761%