

# Analysis of $\Upsilon p \rightarrow pK^0_s K^0_s$ from the g12 data set

This note presents the analysis of the reaction  $\gamma p \rightarrow K_s K_s p \rightarrow \pi^+ \pi^- \pi^+ \pi^- (p)$  from the CLAS g12 run data. The authors found several peaks in the  $K_s K_s$  background-subtracted mass spectrum. They discuss, in particular, a peak found about 1500 MeV. They study two  $t$  four-momentum regions and show that the peak is enhanced in the low- $t$  region. They conclude that the production in this mass region is associated with a  $t$ -channel mechanism. A spherical harmonics moments analysis is performed to study the spin-parity structure in this mass region and to estimate the contributions of the  $f_2(1525)$  and  $f_0(1500)$  to this peak.

- Authors: Shloka Chandavar and Ken Hicks
- Committee: C.Salgado, D. Glazier and L. Zana

- Started: October 8, 2015
- First round of comments to authors: November 4, 2015
- Conference call with authors: November 16, 2015
- Status (2/24/16): Waiting on author's response.

## Most Important Comments :

a) We are not clear about the usefulness of your moments analysis and about your conclusions about the spin-parity structure of your signal. But in general, the moments method, as presented, does not seem to show enough discrimination power to establish the spin-parity structure of your signal in the 1500 MeV mass region. Could you make your arguments more quantitative (i.e. comparing (testing) hypotheses and assigning probabilities to them)?

b) We can not follow your conclusions that the production on the  $t$ -channel should be mediated by a pion.

c) The procedure of increasing cut limits and comparing results does not tell you much about the systematic errors.