

$B \rightarrow K^* J/\psi$ dipair

Marcin Chrzęszcz¹, Nicola Serra¹

¹ University of Zurich



**University of
Zurich**^{UZH}

February 2, 2015

Geeting the numbers together (MoM)

- Consistent with Fit.

parameter	$m_{K\pi}$ range in MeV/c^2					
	[795.9, 995.9]	[825.9, 965.9]	[826.0, 861.0]	[861.0, 896.0]	[896.0, 931.0]	[931.0, 966.0]
F_1	0.558 ± 0.003	0.558 ± 0.003	0.566 ± 0.006	0.561 ± 0.004	0.549 ± 0.004	0.562 ± 0.005
S_3	0.000 ± 0.002	0.001 ± 0.002	-0.006 ± 0.006	0.000 ± 0.004	0.001 ± 0.003	0.004 ± 0.006
S_4	-0.280 ± 0.003	-0.282 ± 0.004	-0.278 ± 0.007	-0.288 ± 0.005	-0.279 ± 0.004	-0.275 ± 0.006
S_5	-0.002 ± 0.003	-0.002 ± 0.003	-0.004 ± 0.007	0.000 ± 0.005	-0.006 ± 0.003	0.003 ± 0.006
S_6^s	0.001 ± 0.003	0.002 ± 0.003	-0.004 ± 0.008	0.001 ± 0.003	0.003 ± 0.004	0.003 ± 0.005
S_7	0.001 ± 0.003	0.001 ± 0.003	-0.003 ± 0.007	0.001 ± 0.004	0.001 ± 0.004	0.007 ± 0.006
S_8	-0.053 ± 0.003	-0.054 ± 0.003	-0.072 ± 0.008	-0.058 ± 0.004	-0.051 ± 0.004	-0.047 ± 0.006
S_9	-0.089 ± 0.003	-0.088 ± 0.004	-0.089 ± 0.008	-0.086 ± 0.004	-0.091 ± 0.004	-0.086 ± 0.006
F_5	0.080 ± 0.004	0.068 ± 0.003	0.10 ± 0.012	0.053 ± 0.006	0.061 ± 0.005	0.108 ± 0.009
S_{S1}	-0.240 ± 0.004	-0.245 ± 0.004	-0.70 ± 0.01	-0.387 ± 0.007	-0.109 ± 0.006	0.160 ± 0.010
S_{S2}	0.003 ± 0.003	0.007 ± 0.003	0.140 ± 0.008	0.045 ± 0.004	-0.028 ± 0.004	-0.108 ± 0.006
S_{S3}	0.004 ± 0.003	0.004 ± 0.003	-0.005 ± 0.007	0.003 ± 0.003	0.004 ± 0.003	0.012 ± 0.006
S_{S4}	0.001 ± 0.003	0.001 ± 0.003	0.014 ± 0.008	-0.003 ± 0.003	0.000 ± 0.004	0.005 ± 0.006
S_{S5}	-0.065 ± 0.003	-0.061 ± 0.003	0.040 ± 0.008	-0.027 ± 0.004	-0.091 ± 0.004	-0.157 ± 0.007

One can use formula:

$$F_s = \frac{[(S_{S1}^+ + S_{S1}^-)^2/16 + (S_{S1}^+ - S_{S1}^-)^2/(16 \times 1.23)] \frac{3.24}{3F_I}}{1 - [(S_{S1}^+ + S_{S1}^-)^2/16 + (S_{S1}^+ - S_{S1}^-)^2/(16 \times 1.23)] \frac{3.24}{3F_I}} \quad (1)$$

In $\pm 100 \text{ MeV}/c^2$ $m_{K\pi}$ one gets:

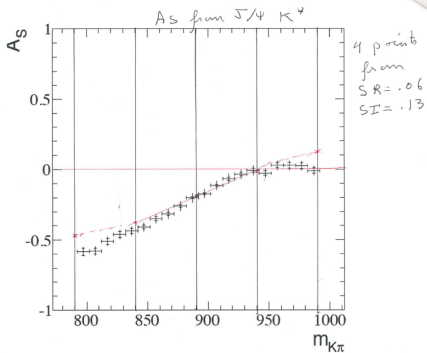
$$F_s = 0.060 \pm 0.003$$

Directly from MoM:

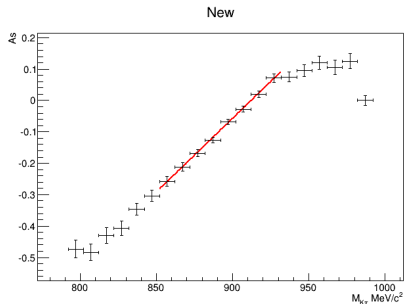
$$F_s = 0.079 \pm 0.003$$



S_{s1} as function of $m_{K\pi}$



slope: $4.2e-3 \pm$ my rooler
error



slope: $4.69342e-03 \pm$
 $4.13931e-04$

- 1 Things that I would like to check:
 - Check if LL fit has the same slope.
 - Check what will happen with folding.
 - What will happen after having alignment cut.
 - More ideas welcome!

