## Final State Interactions and Polarization Observables in the Reaction $pp \rightarrow pK^+\Lambda$

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Due to the lack of high quality hyperon beams final state interactions in hyperon production reactions are a compelling tool to study hyperon nucleon interactions. A method has been proposed[1] to determine the spin triplet  $p\Lambda$  scattering length with a polarized proton beam. The COSY-TOF experiment has recently been upgraded in order to reconstruct the  $pK^+\Lambda$  final state with sufficient precision for this analysis. However, we find an unexpected behavior of the  $K^+$  analyzing power which spoils the extraction method with the available statistics. A theoretical explanation is pending.

Furthermore, the polarized beam together with the self analyzing decay of the  $\Lambda$  allows us to determine the  $\Lambda$  depolarization. This is especially sensitive to  $K^+$  and  $\pi$  exchange in the production mechanism. Our finding verifies, to a large extent, the result from DISTO that has so far been the only measurement close to the production threshold.

[1] A. Gasparyan et. al. Phys.Rev. C69 (2004) 034006.

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