# Electromagnetic $K^+$ production on the deuteron with hyperon recoil polarization

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Photo- and electroproduction processes of $K^+$ on light nuclei are the most promising candidates that allow us to study the $YN$ interaction in continuum. An inclusive $d(e,e'K^+)YN$ experiment has already been performed, while the data for $d(\gamma,K^+Y)N$ and $^3\mathrm{He}(\gamma,K^+Y)N$ are being analyzed at TJNAF.

Beginning with photoproduction we have analyzed the inclusive and exclusive $\gamma+d\to K^++\Lambda(\Sigma)+N$ processes. These analyses have incorporated the $YN$ final state interaction precisely using the Nijmegen soft core potentials, NSC97f and NSC89. We have found sizeable FSI effects around the $K^+\Lambda N$ and $K^+\Sigma N$ thresholds, especially in the double polarization observable $C_z$

We have also investigated the electroptoduction process $d(e,e'K^+)YN$. For suitable $Q^2$ values, cross sections show a prominent enhancement around the $\Sigma$ threshold, which will give us valuable and direct information on the $\Lambda N-\Sigma N$ coupling interaction. A systematic analysis for a wide range of kinematics for both photo- and electroproduction processes is in process.

## References

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