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Hyperon Status

Discussion for a future roadmap for PANDA

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Physics topics

- Hyperon production dynamics / spin observables
- Hyperon spectroscopy
- Hyperon Dalitz Decays



Hyperon production dynamics

- Past activities: (**Pandora** / **Pandaroot**)
 - Single-strange hyperons (**S. Grape**, **S. Esch**, **K. Schönning**)
 - Double- and triple strangeness (**E. Thomé**, **K. Schönning**)
 - Charmed hyperons (**E. Thomé**)
- Ongoing / Future:
 - Strange hyperons (**W. Ikegami-Andersson** + **E. Perotti**)
 - Charmed hyperons (**S. Vejdani**)



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Hyperon spectroscopy

- Past activities: (**Pandora** / **Pandaroot**)
 - Excited Ξ (**A. Zambanini**, **J. Pütz**)
 - Charmed hyperons (**D. Deermann**)
- Ongoing / Future:
 - Excited Ξ (**J. Pütz**)
 - Charmed hyperons (**S. Vejdani**)



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Hyperon Dalitz decays

- Past/present activities:
 - $\Lambda(1520) \rightarrow \Lambda e^+e^-$ (J. Biernat)
- Future:
 - $\Sigma^0 \rightarrow \Lambda e^+e^-$ (J. Pettersson ?)



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The coming year

- Simulation studies for the coming PANDA physics paper (J. Pütz, W. Ikegami-Andersson)
- The $\bar{p} p \rightarrow \bar{\Omega} \Omega$ polarisation observables (W.I-A, E. Perotti)
- Simulations of hyperons with different GEM settings (N. Divani)



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Tools

- Hardware: GEM's
 - Minimum settings?
 - Alternatives?
- Software
 - Track finder
 - Low energy pions
 - Realistic physics generators for hyperon production and decay
- Physics
 - PWA tools for hyperon spectroscopy