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A Common Partial Wave Anaylsis Framework for PANDA

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A large part of the physics program of the PANDA experiment at FAIR deals with the search for new conventional and exotic hadronic states like e.g. hybrids and glueballs. In a majority of analyses PANDA will need a Partial Wave Analsis (PWA) to identify possible candidates and for the classification of known states. Therefore, a new, agile and efficient PWA-Framework will be developed. It will be modularized to provide easy extension with models and formalisms as well as fitting of multiple datasets, even from different experiments. Experience from existing PWA programs was used to fix the requirements of the framwork and to prevent it from restrictions. It will provide various estimation and optimization routines like Minuit2 and the Geneva library. The challenges involve parallelization, fitting with a high number of free parameters, managing complex meta-fits and quality assurance / comparability of fits. To test the software, it will be used with data from running experiments like BaBar or BESIII. The presentation will show the status of the framework implementation as well as first tests.

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