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## Extended Neutral Particle Analyzer System for the KSTAR

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Additional neutral particle analyzer has been installed to investigate the variation of fast ion tails with regard to the line of sight during 2012 KSTAR campaign. The system has the same photo-diode particle detector as previous system [1]. Both newly installed system and previous system modifield for 2012 campaign have two channels. One has a particle stopper transparent to hard X-ray, the other has no one. It will be used to separate the hard X-ray component from total hard X-ray and fast neutral counts. It is expected to measure fast ion tails more clearly through this extended system. A detailed system and calibration result will be presented in the conference.

## Reference

[1] S.H. Kim et al, Fusion Engineering and Design, 86 (2011) 1236-1238

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