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A multi-analyser upgrading possibility for the thermal-neutron triple-axis spectrometer Taipan

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Taipan is a high-flux thermal-neutron triple-axis spectrometer with a traditional single-detector design. Taipan has been working as the work horse for inelastic neutron scattering experiments at ACNS for the last ten years, generating numerous beautiful scientific highlights. Following the trend of the neutron instrumentation, it is interesting to consider the future upgrade of Taipan to increase its data acquisition efficiency with a multi-analyser design. In this research, the possibility of upgrading Taipan into a multi-analyser triple-axis spectrometer is discussed. The simulation of the 21 analyser channels with a 2 degree gap in-between is demonstrated. The simulated result shows that the data acquisition efficiency can be substantially enhanced on Taipan and the multi-analyser design is also very suitable for magnetic diffraction measurement at the low Q range.

Presenter Gender

Man

Do you wish to take part in the Student Poster Slam

No

Condition of submission

Yes

Students Only - Are you interested in AINSE student funding

No

Level of Expertise

Expert

Pronouns

Which facility did you use for your research

Australian Centre for Neutron Scattering

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