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Optimisation Procedures for ISIS-II Targets

ISIS-II, the successor to the UK ' s pulsed neutron and muon source, will require two newly-designed spallation targets [1]. This work is still at the conceptual design stage, with a range of possible target designs still under consideration [2]. To evaluate these concepts, it is necessary to produce a range of well-optimised target designs in sufficient detail to understand all the issues involved. Trade-offs must often be made between the competing requirements of neutronic performance and engineering reliability.
This poster will present details of the optimisation procedures applied to various aspects of the target design, including selecting the number of target plates and designing the outer pressure vessel. These processes were automated as much as possible, allowing a large number of design concepts to be evaluated in detail.

References
[1] Outline plans for target stations at the ISIS-II facility –S. Gallimore ICANSXXIV 2023
[2] Initial Target Concepts for ISIS-II –D. Wilcox ICANSXXIV 2023

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