

Abstract Submitted  
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**Determining cross sections for low-energy neutron capture reactions via the Surrogate method**<sup>1</sup> JUTTA ESCHER, FRANK DIETRICH, NICHOLAS SCIELZO, Lawrence Livermore National Laboratory, CHRISTIAN FORSSSEN, Chalmers University of Technology — The *Surrogate Nuclear Reactions* method, an indirect approach for determining compound-nuclear reaction cross sections, has recently received renewed attention. The method has primarily been employed to determine (n,f) cross sections for various actinides, including unstable isotopes. Cross sections for other reactions, in particular (n, $\gamma$ ) reactions on short-lived targets, are of interest as well, but are more difficult to extract from Surrogate measurements. This contribution will focus on the prospects for employing the Surrogate method to obtain neutron-capture cross sections for applications in the areas of astrophysics and nuclear energy. Progress made in understanding the impact and treatment of the spin mismatch between the desired (neutron-induced) and Surrogate reactions will be summarized. Calculations will be presented that assess the validity of employing various approximate treatments in the interpretation of Surrogate measurements and insights gained from recent experiments will be discussed.

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