

Abstract Submitted
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Compound-nuclear reaction cross sections via the Surrogate method: considering the underlying assumptions¹ JUTTA ESCHER, FRANK DIETRICH, Lawrence Livermore National Laboratory — The Surrogate Nuclear Reactions approach makes it possible to determine compound-nuclear reaction cross sections indirectly. The method has been employed to determine (n,f) cross sections for various actinides, including unstable species [1-4]; other, primarily neutron- induced, reactions are being considered also [5,6]. The extraction of the sought-after cross sections typically relies on approximations to the full Surrogate formalism [7]. This presentation will identify and critically examine the most significant assumptions underlying the experimental work carried out so far. Calculations that test the validity of the approximations employed will be presented. [1] J.D. Cramer and H.C. Britt, Nucl. Sci. and Eng. 41, 177(1970); H.C. Britt and J.B. Wilhelmy, *ibid.* 72, 222(1979) [2] M. Petit et al, Nucl. Phys. A735, 345(2004) [3] C. Plettner et al, Phys. Rev. C 71, 051602(2005); J. Burke et al, Phys. Rev. C. 73, 054604(2006) [4] W. Younes and H.C. Britt, Phys. Rev. C 67, 024610(2003); 68, 034610(2003) [5] L.A. Bernstein et al, AIP Conf. Proc. 769, 890(2005) [6] J. Escher et al, Nucl. Phys. A758, 43c(2005) [7] J. Escher and F.S. Dietrich, submitted (2006)

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Jutta Escher
Lawrence Livermore National Laboratory

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