

SCALE Users' Group Workshop

Open Mic

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U.S. DEPARTMENT OF
ENERGY

My Uses of SCALE

- 1. TCR modeling (KENO)
- 2. Sensitivity Analysis (TSUNAMI)
- 3. Geometry Uncertainty (Sampler)
- 4. SCALE 6.2.4 validation (TRITON/Origen)
- 5. TCR Benchmarking Comparison (TSUNAMI-IP)

Sensitivity Analysis for TCR

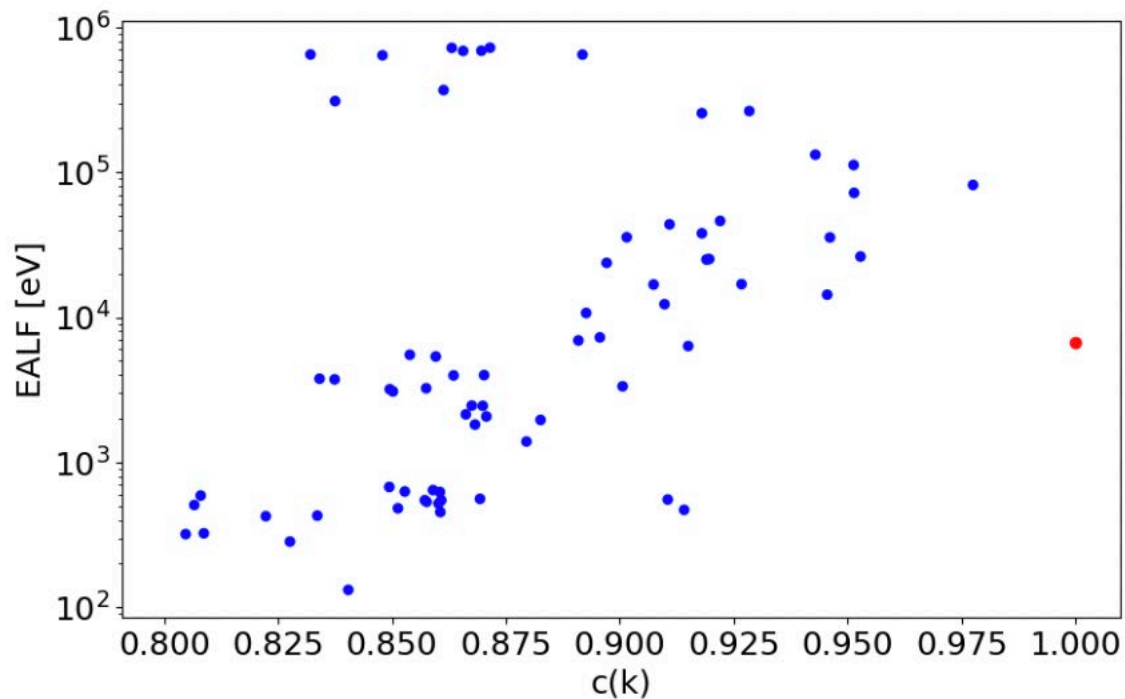


Figure 1a. EALF for the relevant experiments and Case 1.

NEUTRONIC BENCHMARKING OF SMALL GAS-COOLED SYSTEMS, Briana Hiscox¹, Benjamin Betzler¹, Vladimir Sobes¹, William J. Marshall¹. PHYSOR 2020 Proceedings, Available at: https://drive.google.com/file/d/1jQeqyC_SnTerAr_EMzn_kkVwC_tm9DTU/view

Sensitivity Analysis for TCR

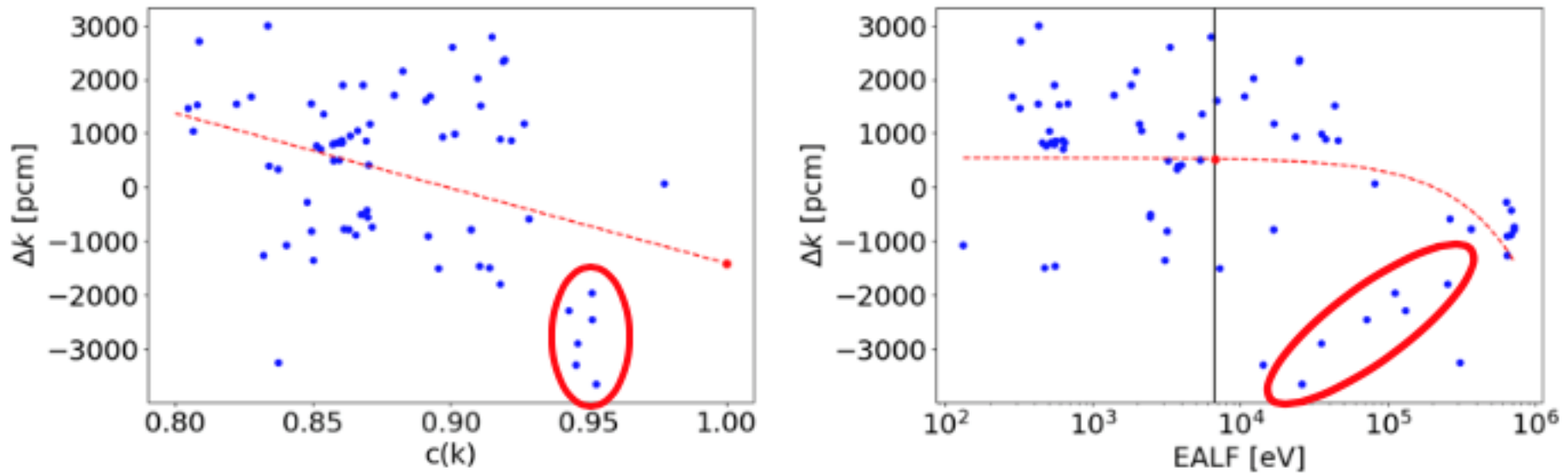


Figure 1b and 1c. The error between the model and the corresponding experiment as a function of c_k (left) and EALF (right).

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Conclusions

- Study documented in PHYSOR 2020 paper indicated that
 - There is a lack of intermediate energy range experiments
 - High error exists between measured and calculated k_{eff} for many evaluated benchmarks
 - The resulting predicting of Δk has a high uncertainty. New methods should be evaluated to determine Δk more accurately.

Future Work

Ugur Mertuyurek and Jianwei Hu are investigating a new method.