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Title: R-X Modeling Figures

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Intended for: Figures for inclusion in an ORNL final report
Report

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R-X Modeling Figures

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Background

This document contains figures that will be included in an ORNL final report that details computational efforts to model an irradiation experiment performed on the Godiva IV critical assembly. This experiment was a collaboration between LANL and ORNL.

Main Body Figures

Below are figures that will be placed in the main body of the final report. These figures give details of the experiment performed with the Godiva IV critical assembly and mainly deal with the location of the samples placed within the glory hole of Godiva IV for the irradiations.

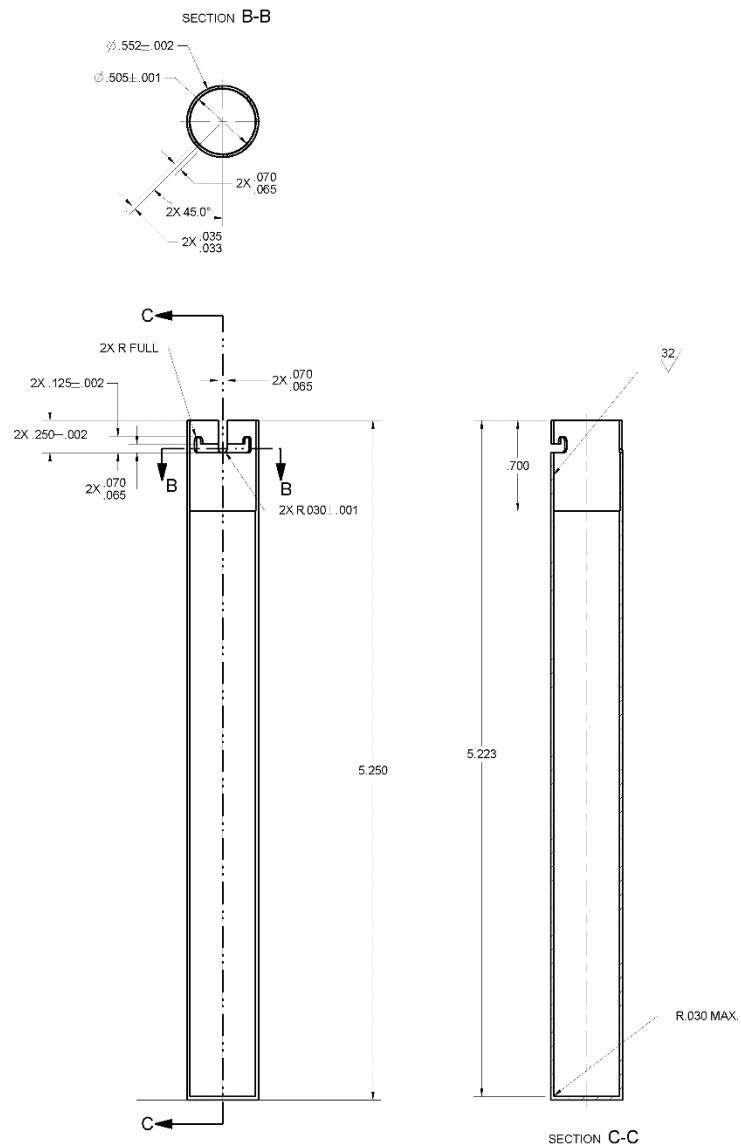


Figure 1. Lower portion of the Godiva-IV sample holder.

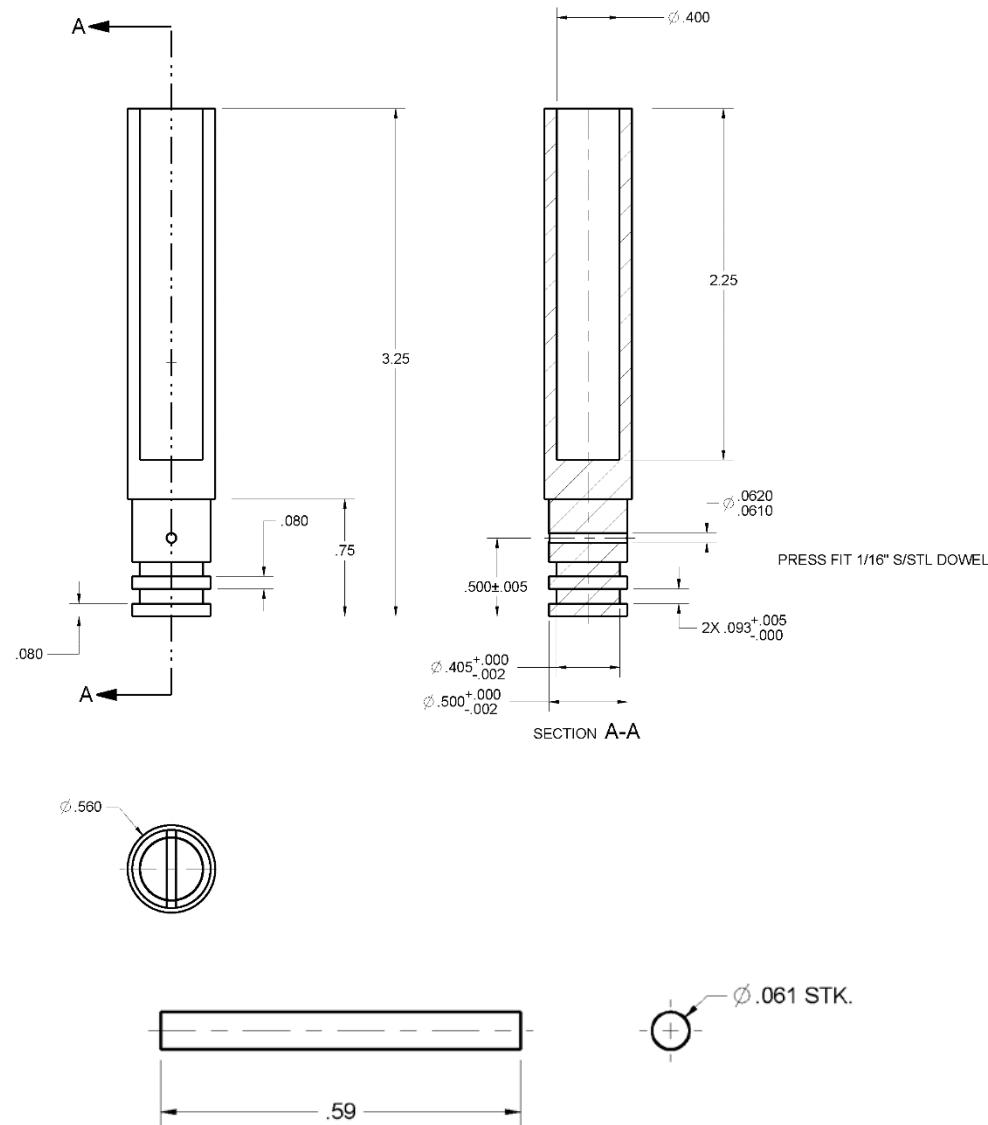


Figure 2. Upper portion of the Godiva-IV sample holder and stainless steel dowel.



Figure 3. Photograph of sample ampules. From left to right: no sample (empty), plutonium (not used in this irradiation), HEU, and NU.

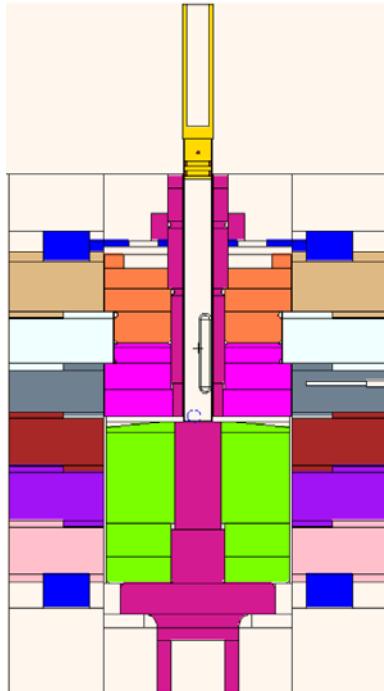


Figure 5. Cutaway of Godiva-IV with aluminum sample holder and empty ampule.

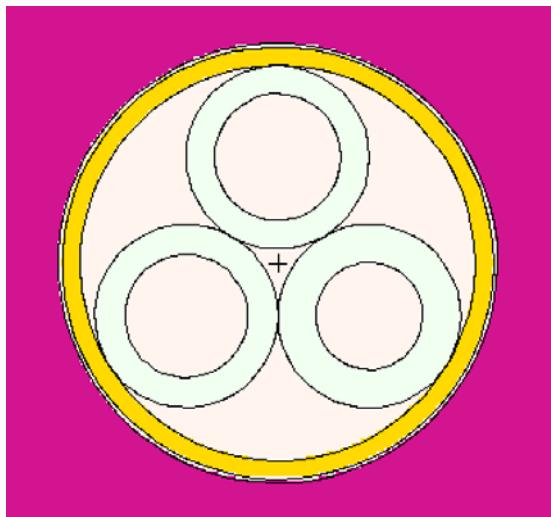


Figure 6. Top view of ampules in sample holder in the Godiva-IV glory hole.

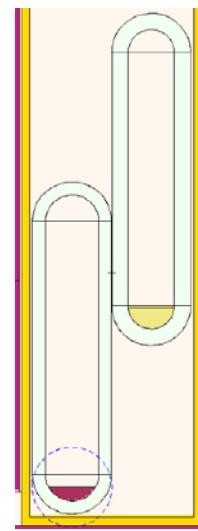


Figure 7. Elevation view of the HEU ampule (left) and the NU ampule (right) in the sample holder in the Godiva-IV glory hole.

Appendix Figures

Below are the figures intended to be placed in the appendix of the final report. The figures give MCNP modeling results of the experiment.

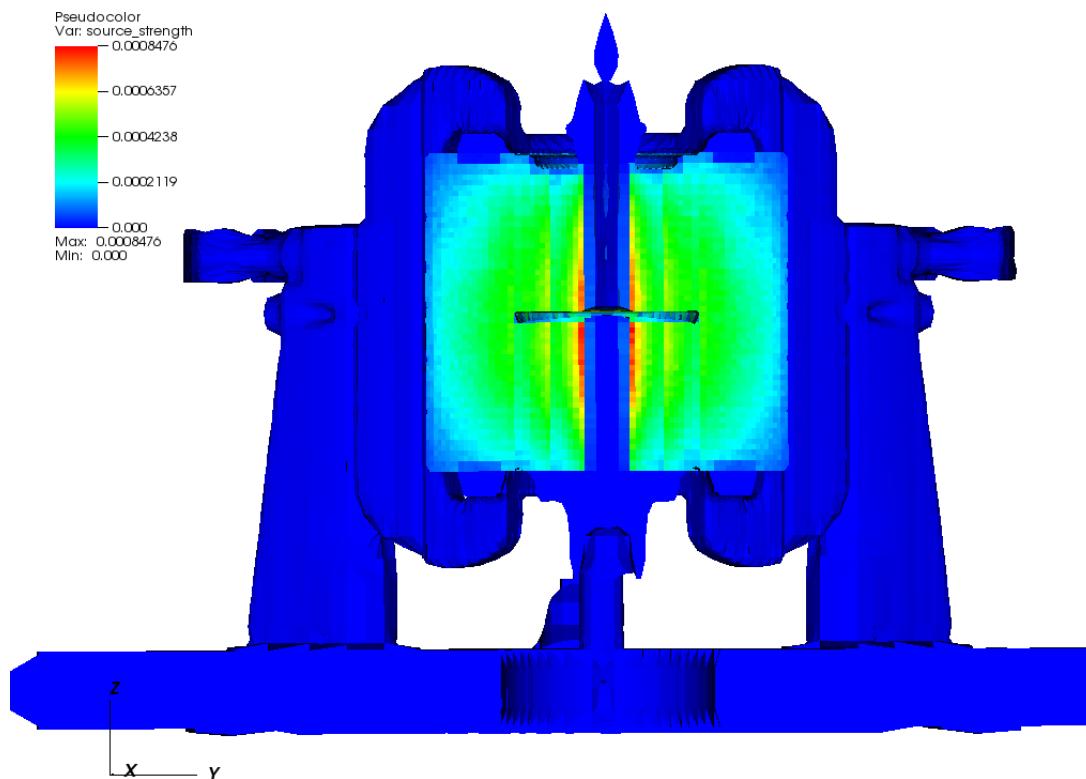


Figure 1. Approximate Godiva-IV fixed neutron source used by Denovo
(slice through the center of the assembly).

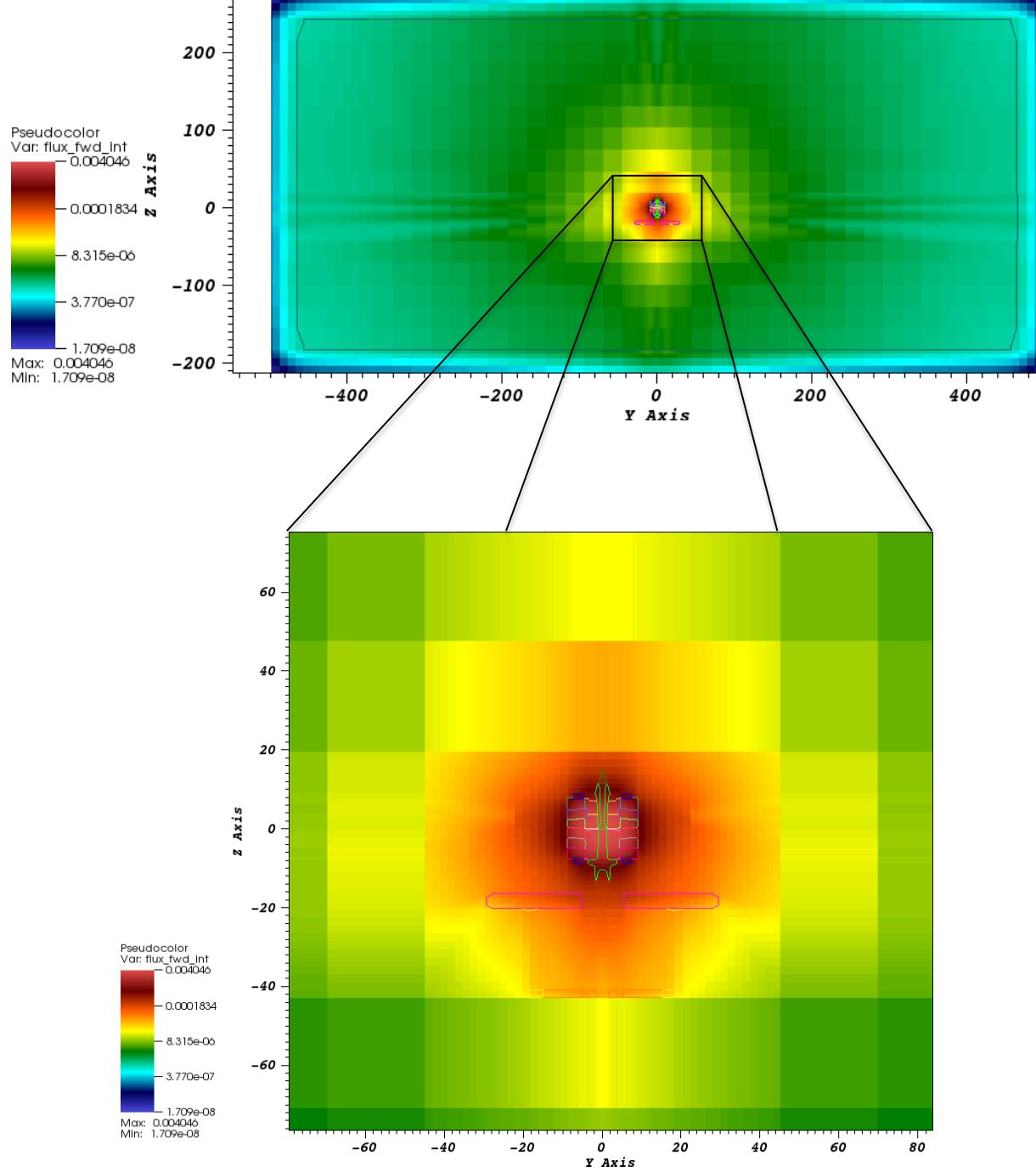


Figure 2. Forward total neutron flux (2D slice through the center of the assembly and surrounding room).

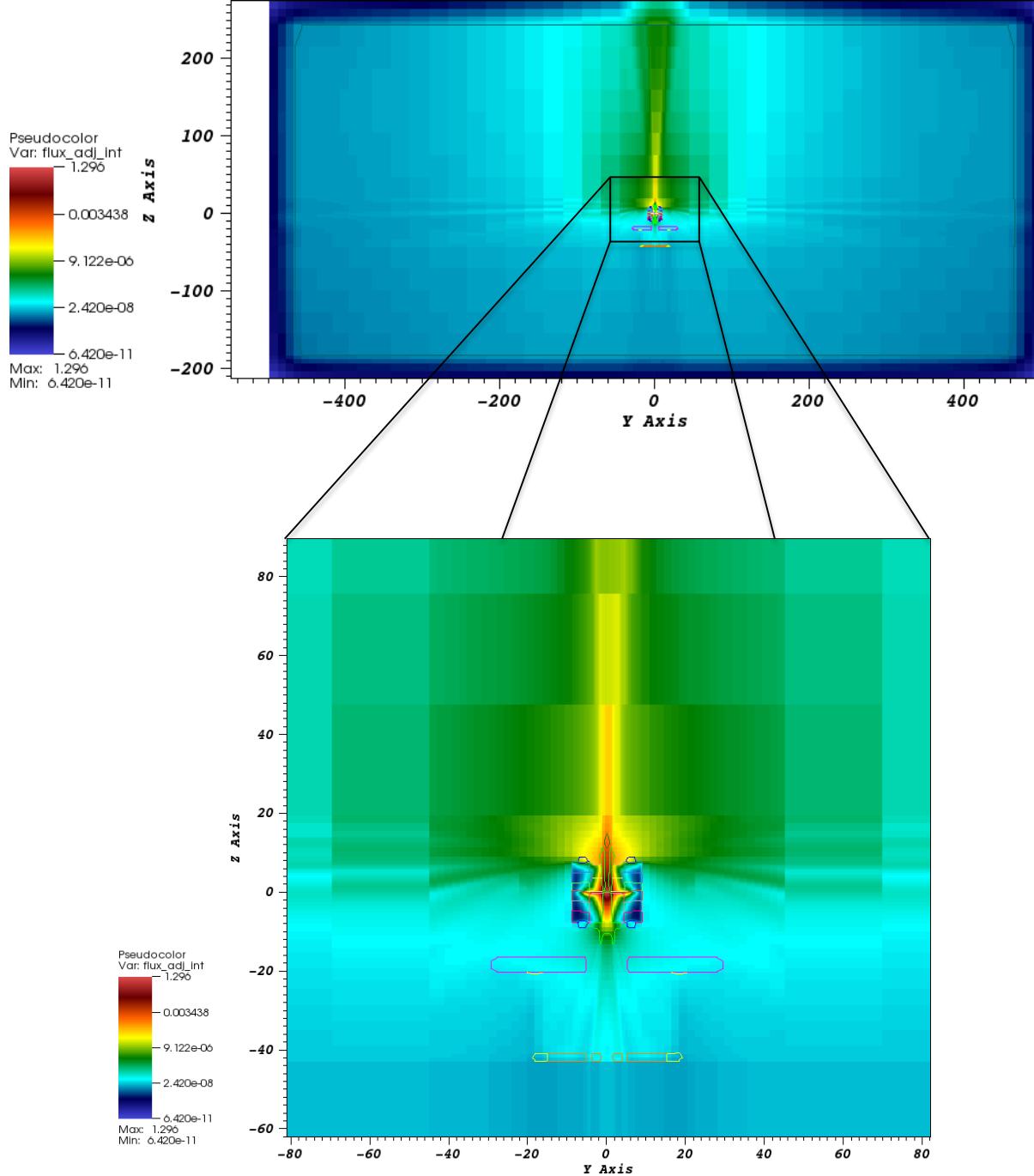


Figure 3. Adjoint total neutron flux (2D slice through the center of the assembly and surrounding room).

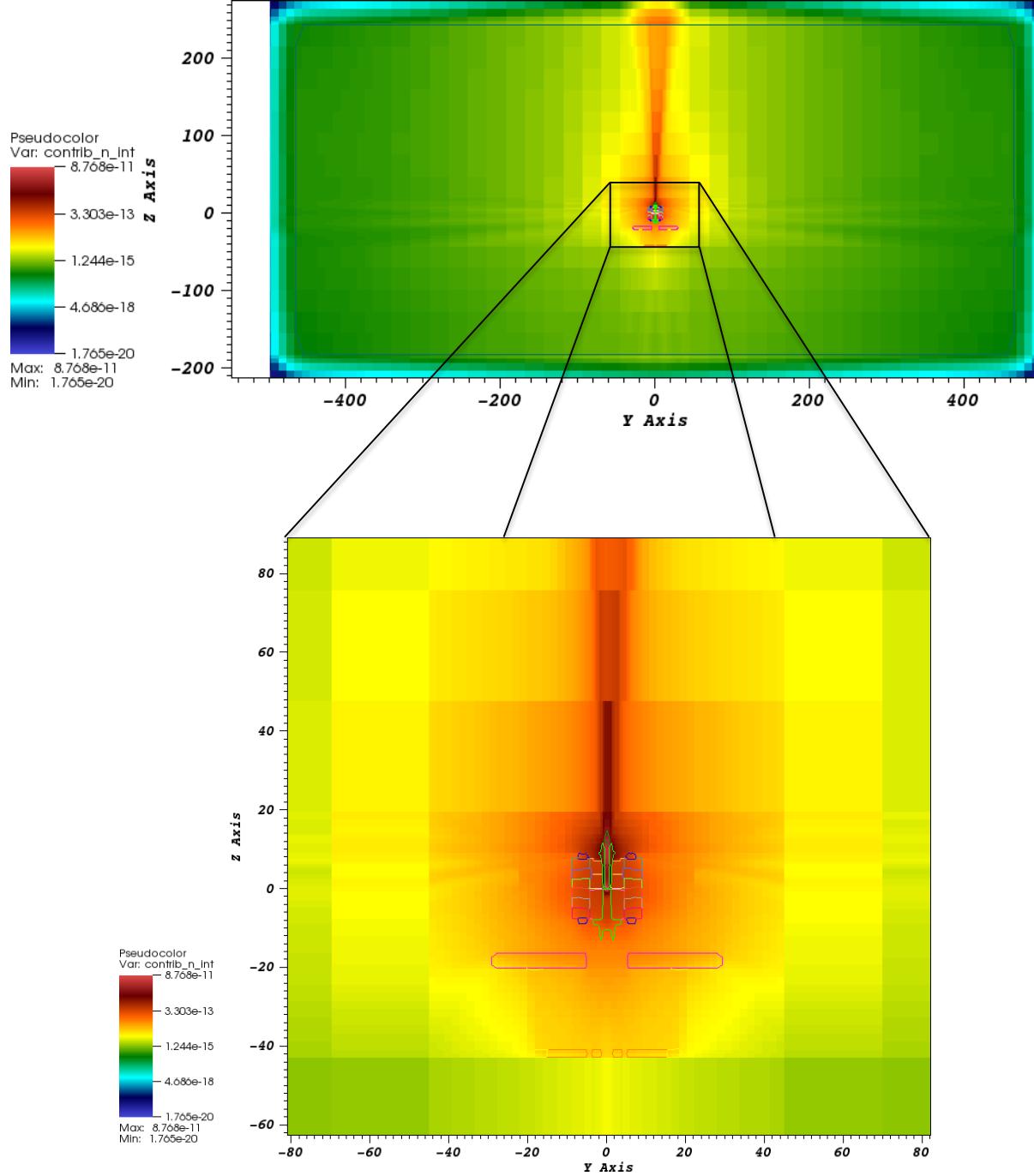


Figure 4. Contribution total neutron flux (2D slice through the center of the assembly and surrounding room).

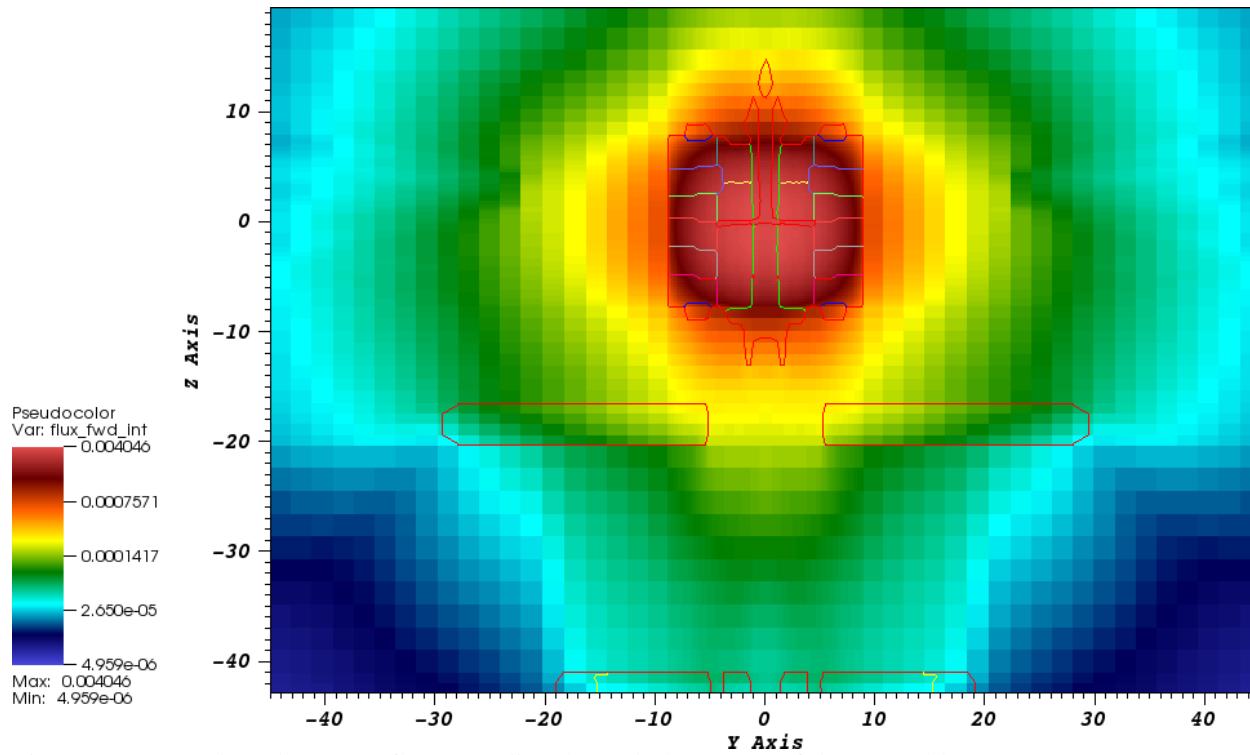


Figure 5. Forward total neutron flux (2D slice through the center of the assembly, no surrounding room or air).

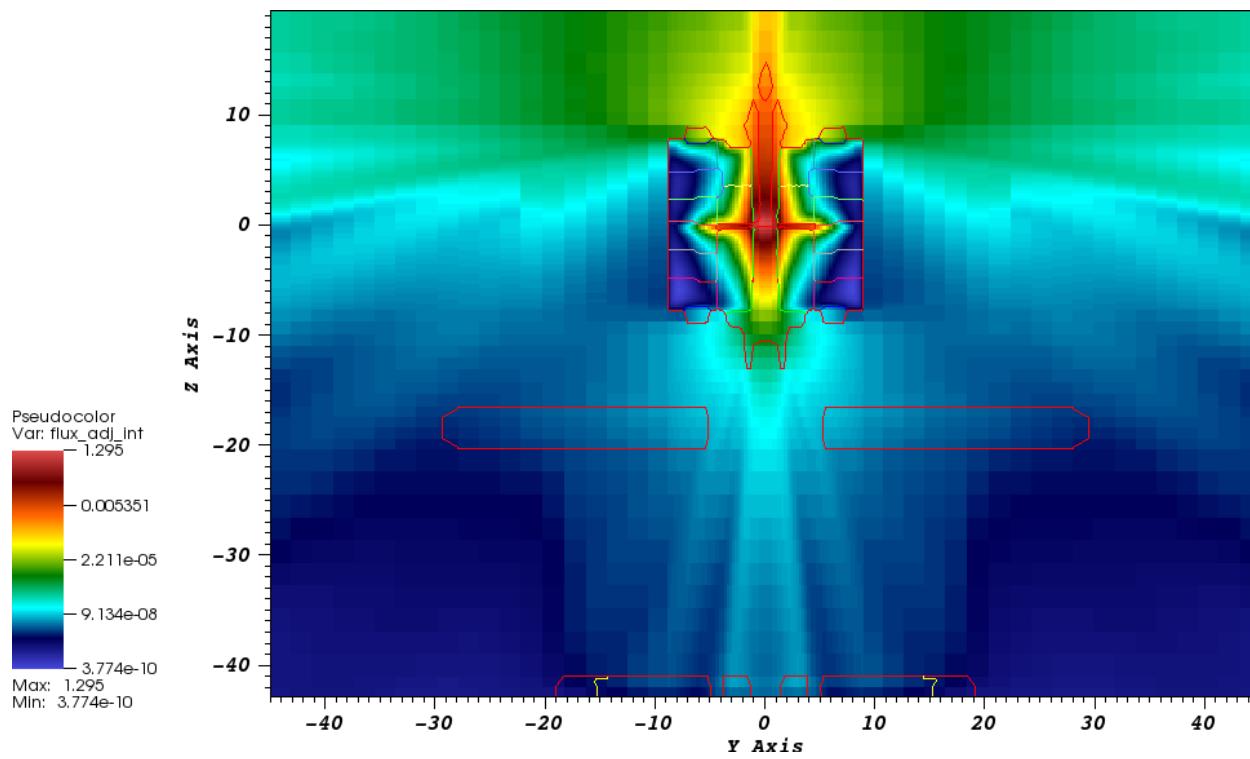


Figure 6. Adjoint total neutron flux (2D slice through the center of the assembly, no surrounding room or air).

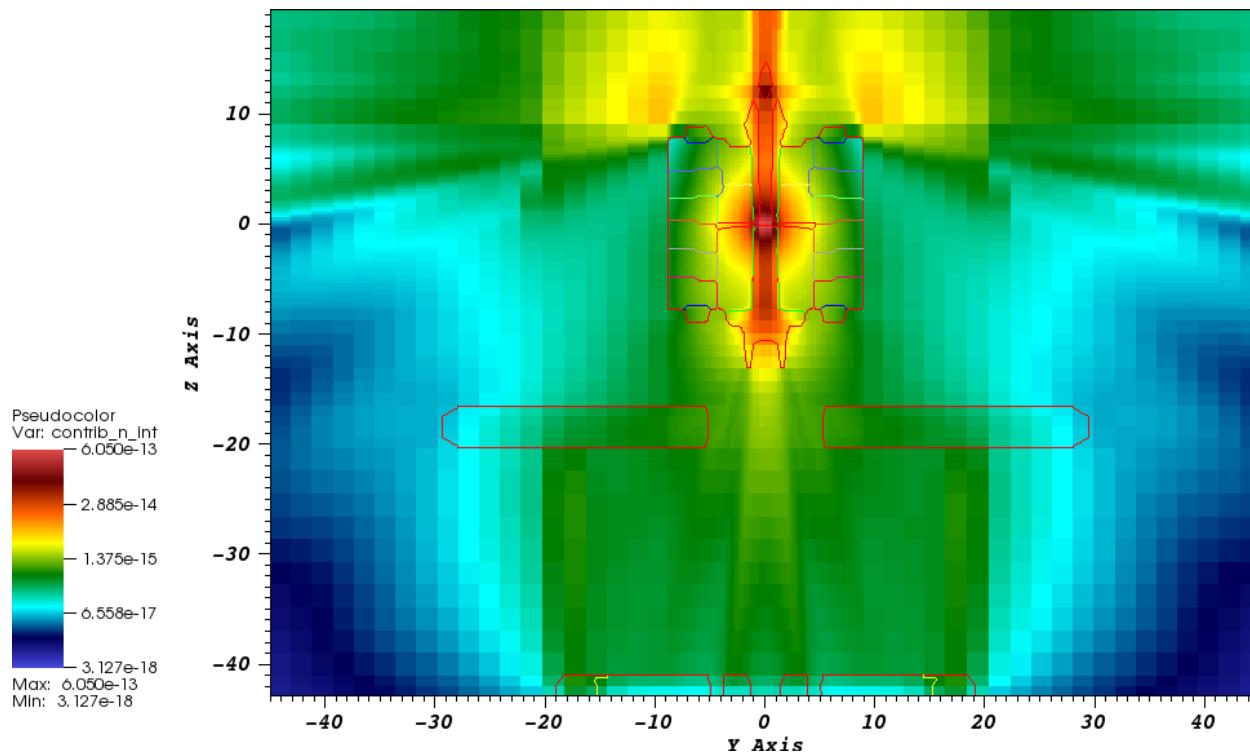


Figure 7. Contribution total neutron flux (2D slice through the center of the assembly, no surrounding room or air).