Supplementary Materials for

## Multi-scale Investigation of Heterogeneous Swift Heavy Ion Tracks

## in Stannate Pyrochlore

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(b) 2×10<sup>12</sup>



(c)  $4 \times 10^{12}$ 



(d)  $8 \times 10^{12}$ 



Figure S1: Neutron PDF data (black curve) with small box refinements of the intermediate-range structure (15-50 Å) for  $\text{Er}_2\text{Sn}_2\text{O}_7$  irradiated with (*a*)  $7 \times 10^{11}$ , (*b*)  $2 \times 10^{12}$ , (*c*)  $4 \times 10^{12}$ , and (*d*)  $8 \times 10^{12}$  ions/cm<sup>2</sup>. Three models were used for the refinement: (top row, green) disordered fluorite plus pristine pyrochlore, (middle row, blue) disordered fluorite plus defective pyrochlore, and (bottom row, red) disordered fluorite plus pristine pyrochlore plus defective pyrochlore. The difference curves (black lines) and the goodness-of-fit values ( $R_{wp}$ ) are shown below and above the PDFs, respectively.