

3.

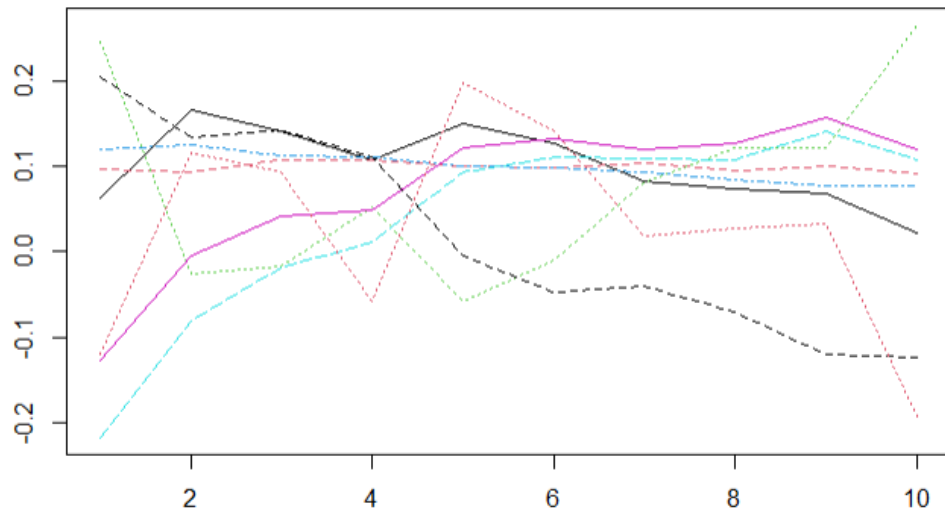


Figure 1: AIC Breakdown Tensor 1

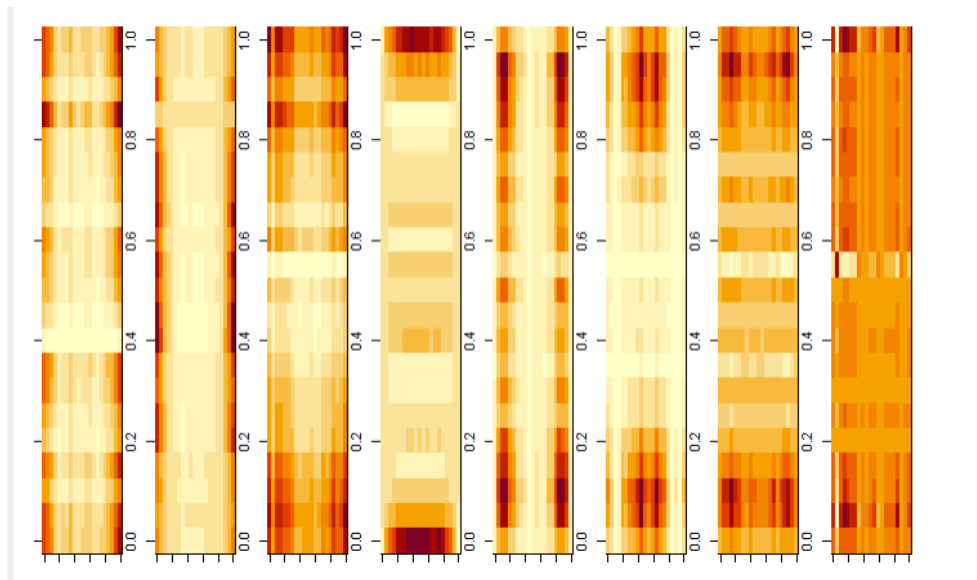


Figure 2: A,B,C Matrix Image Output CP Decomposition Tensor 1

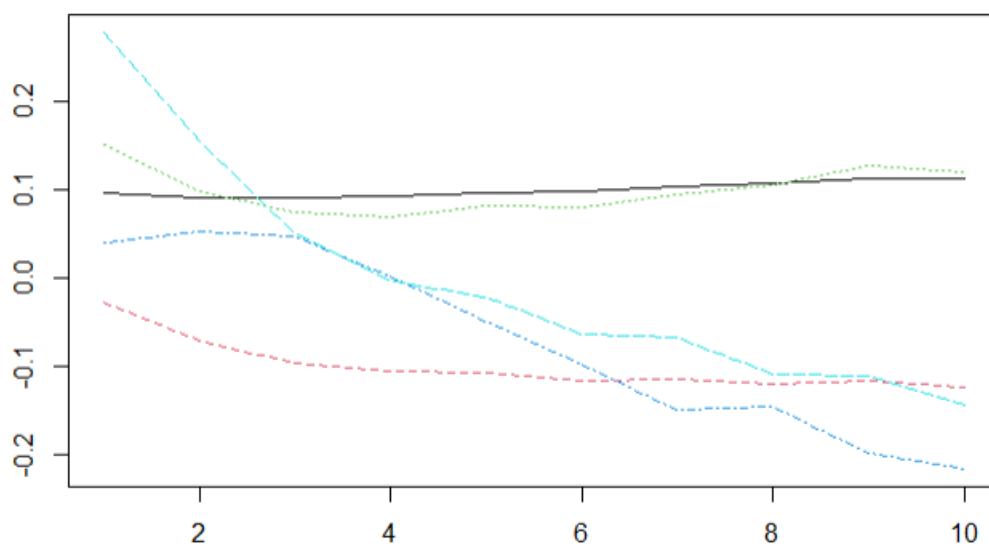


Figure 3: AIC CP Decomposition Tensor 2

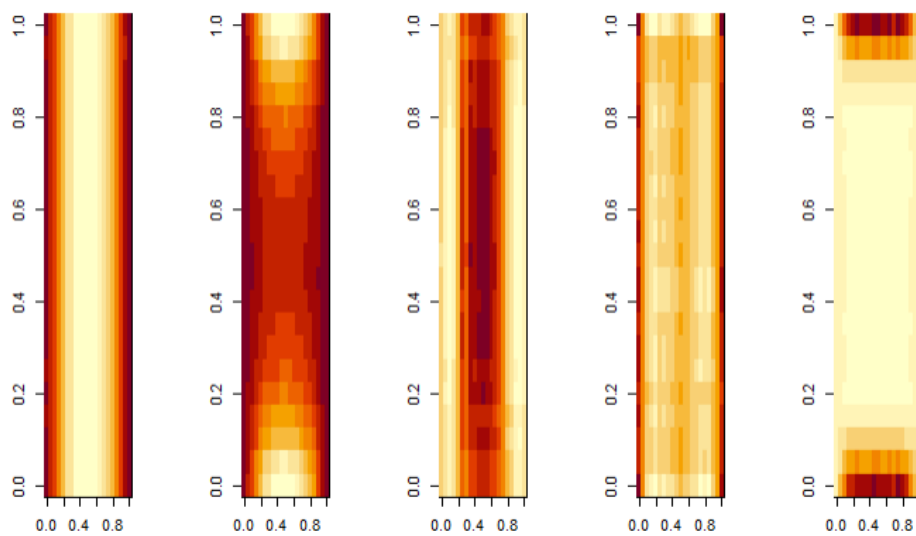


Figure 4: A,B,C Matrix Image Output CP Decomposition Tensor 2

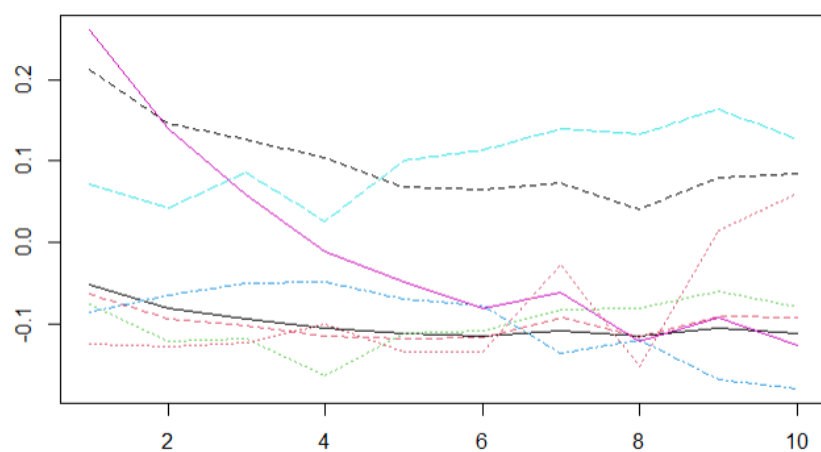


Figure 5: AIC CP Decomposition Tensor 3

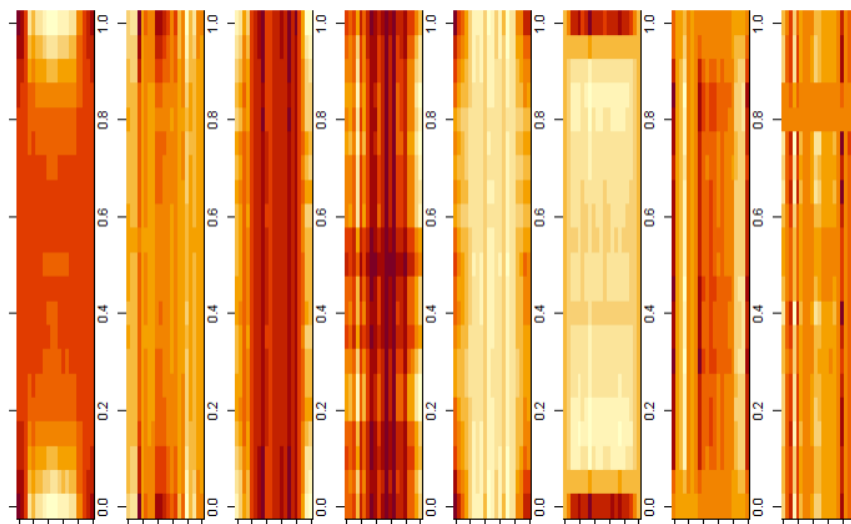


Figure 6: A,B,C Matrix Image Output CP Decomposition Tensor 3

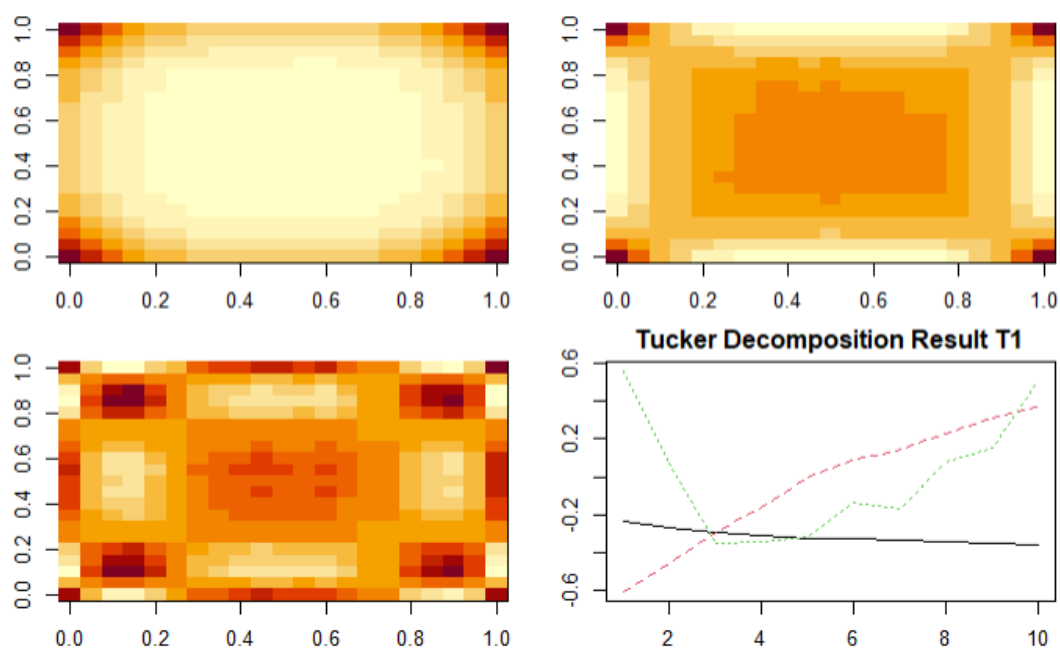


Figure 7: Tucker Decomposition Tensor T1

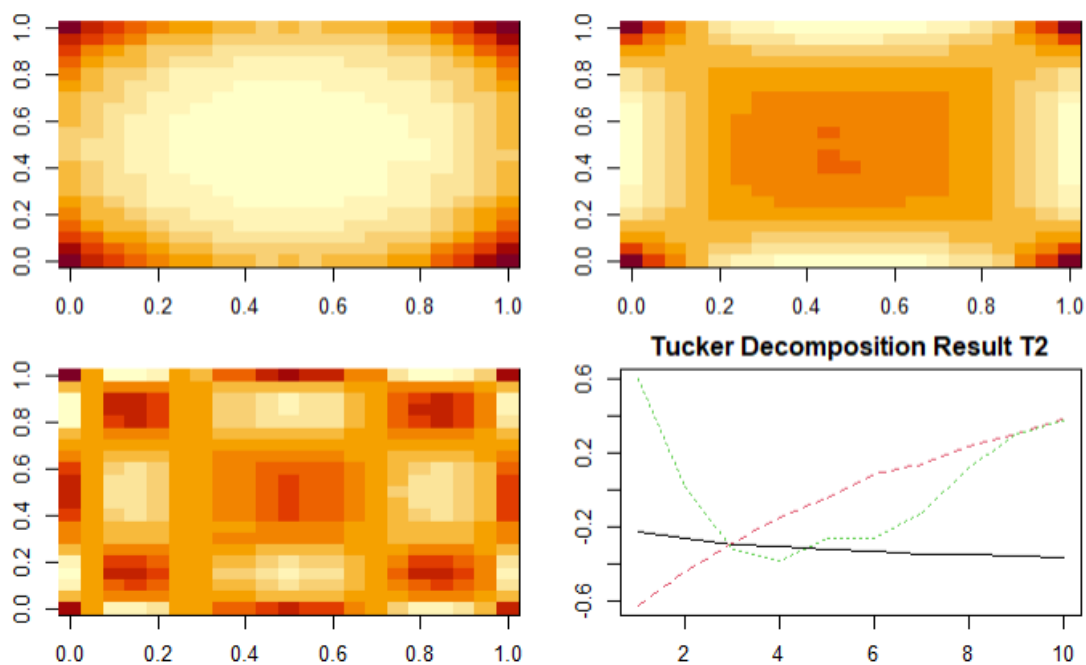


Figure 8: Tucker Decomposition Tensor T2

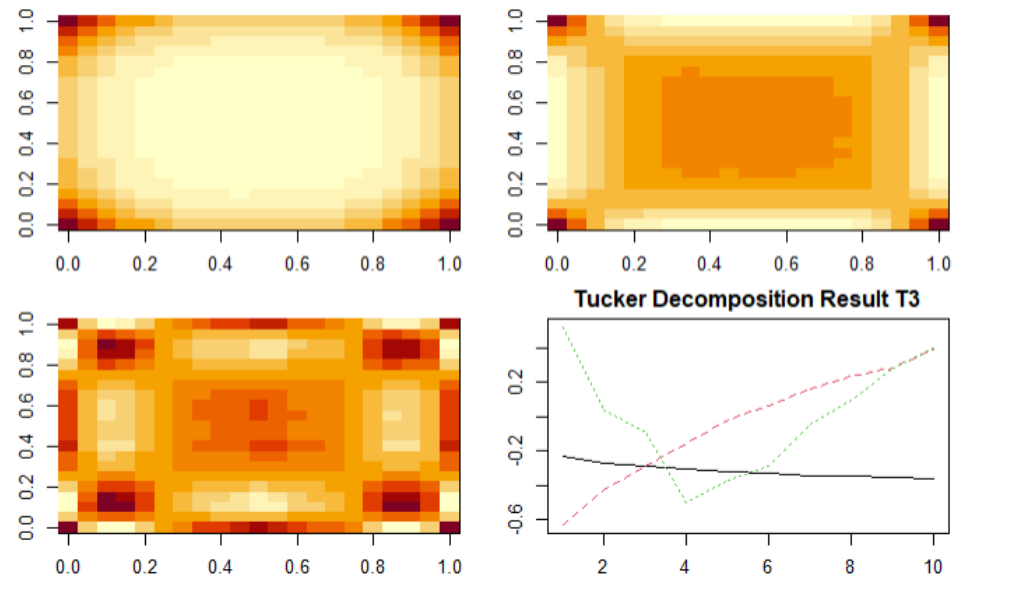


Figure 9: Tucker Decomposition Tensor T3

When looking our results we see that visually, the graphs for AIC of CP decomposition for T1 and T3 both yield a minimum value of 8. In addition we can see that the images, especially the top right images for the Tucker decomposition are much more similar between T1 and T3. However, the CP decomposition seems to yields better results as the visual representation for tucker decomposition does not differ very much between all 3 tensors.

To further back this point, when we compute the inner product difference between T3-T1 and T3-T2, we get higher error values for the difference between T3-T2, which further backs the conclusion that T3 is similar to T1 and T3 corresponds to heat transfer process in material 1.