Report – Experiment B:

Formally demonstrating non-isopotential compartments in a multi-compartment model

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| **Experiment-B1** | * 9 Comp + Soma model, fluxing impermeants in comp 3 and 7 |
| **Experiment-B2** | * 10 Comp model, fluxing impermeants in comp 2 * Unexpected changes occurring in final compartment * Possibly due to an error in the electrodiffusion calculations as I was using concentrations rather than moles to transfer ion |
| **Experiment-B3** | * 5 compartment model, fluxing impermeants in comp 2 to see if we get the same effect, or if there was something incidental in the simulation settings etc. |
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| Title | Experiment-B2 |
| Aim | Sanity check on the multicompartmental model. **Fluxing impermeants in compartment 2**. Direct replica of figure 8C. |
| Starting conditions | * Compartment 10 appears higher up on the table as it is listed alphabetically, but the compartment is actually adjacent to compartment 9. |
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| End of simulation |  |
| Mid anion flux |  |
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| Conclusions | * Strange to see the major fluxes that occur in compartment 10 * It seems like compartment 10 is doing the heavy lifting during the anion flux but returns to close to baseline, whereas compartment 2 has permanent changes. * In Kira’s 8C, compartment 10 does not bear the changes **during** the anion flux. In the mid simulation heatmaps of fig8C compartment 10 behaves as the other compartments * The way in which the values change in compartment 10 almost seem as if there is a dynamic x influx, but it appears to be related to the fact the volume is changing. * This is possibly because compartment 10 is not buffered by 2 adjacent compartments in terms of electrodiffusion. * The heatmap of the simulation end is what we would expect, apart from the smaller changes in compartment 10 * Better compartment names in future to avoid the compartment 10 listing issue. |

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| Title | Experiment-B3 |
| Aim | 5 compartments, flux in compartment 2, try identifying what is going on in the final compartment |
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