

## **Model reduction of the P2D-PSD battery model**

With the numerous applications of batteries ranging from digital devices to electric cars, accurate modelling of batteries has become an essential part of designing efficient and reliable batteries. Up to now, when modelling batteries, people have been assuming constant particle size of the active materials which does not replicate exactly what is happening in reality. However, with the newly introduced, pseudo-two-dimensional particle size distribution (P2D-PSD), a more accurate model of the batteries can be obtained. This introduces more complexity in the system and thus involves more computation time. Our objective is to find a reduced order model that would reduce the computation time while still having an accurate model.

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