Ref: K. Smith, A. Saxon, M. Keyser, B. Lundstrom, Z. Cao, A. Roc, “Life Prediction Model for Grid-Connected Li-ion Battery Energy Storage System,” American Control Conference, Seattle, WA, May 30-June 1, 2017.

**Errata**:

1. There is an error in the Eq. (4), capturing reversible impact of temperature on capacity. In the paper, the equation is:

d0=d0ref\*(exp(-Ea1\_d0/R\*(1/T-1/Tref)-(Ea2\_d0/R)^2\*(1/T-1/Tref)^2))

The “^2” should not be there. Eq. (4) should be corrected to:

d0=d0ref\*(exp(-Ea1\_d0/R\*(1/T-1/Tref)-(Ea2\_d0/R)\*(1/T-1/Tref)^2))

Furthermore, parameters Ea1\_d0 and Ea2\_d0 should be corrected to be: (other parameters are simply listed for convenience)

d0ref=75.1 Ah

Ea1\_d0=4126 J/mol

Ea2\_d0=9.752e6 J-K/mol

Tref=298.15 K

R=8.314 J/K/mol

1. Rather than 1.0, the correct value for parameter alpha\_b1 in Eq. (7) is

alpha\_b1=-1.0

**Additional info for replicating the model:**

1. Functional dependence on state of charge, *SOC*, for cell open-circuit voltage, *VOC*, and negative electrode open-circuit potential, *U-*, are implemented in the model by linearly interpolating the following look-up table data:

soc\_index = [0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0]; % ( ) state-of-charge index

ocv\_index = [3.0000 3.4679 3.5394 3.5950 3.6453 3.6876 3.7469 3.8400 3.9521 4.0668 4.1934]; % (V) OCV, Open-circuit voltage corresponding to soc index for Kokam 75 Ah cell

Uneg\_index = [1.2868 0.2420 0.1818 0.1488 0.1297 0.1230 0.1181 0.1061 0.0925 0.0876 0.0859]; % (V) Uneg, equilibrium potential of negative electrode from Safari & Delecourt "Modeling of a Commercial Graphite/LiFePO4 Cell" JES 158 (2011). Assumes neg. electrode stoichiometry is 0.8 at 100% soc