The work was published on Journal of Power Sources with the name ‘A simulation study of Li-ion batteries based on a modified P2D model’ on Aug. 6th, 2024 and last updated on Mar. 12th, 2025. The introduction, latest version and change log of the work are included in the repository.

The modified P2D model takes a Li-ion battery load current as its input and Li-ion battery inter-electrode potential of as its output. The process of simulating Li-ion battery electrochemical behaviors based on the modified P2D model can be divided into two steps. First, compute the parameters of the modified P2D model based on the program for computing the parameters of the modified P2D model(How to use the program for computing the parameters of the modified P2D model can be known from the Chapter 5 of the manuscript of the work and the instruction of the program for computing the parameters of the modified P2D model). Second, compute the outputs of the modified P2D model based on the program for computing the outputs of the modified P2D model(How to use the program for computing the outputs of the modified P2D model can be known from the Chapter 5 of the manuscript of the work and the instruction of the program for computing the outputs of the modified P2D model). After computing the parameters of the modified P2D model based on the program for computing the parameters of the modified P2D model, not only Li-ion battery inter-electrode potential, but also the physical quantities in the Fig. 2 of the manuscript of the work can be computed based on the program for computing the outputs of the modified P2D model.

The parameters of the modified P2D model can be known from the Table 1 and Appendix A of the manuscript of the work. The parameters of the algorithm for computing the parameters of the modified P2D model can be known from the Chapter 3 of the manuscript of the work. The parameters of the algorithm for computing the outputs of the modified P2D model can be known from the Chapter 4 of the manuscript of the work. During the process of simulating Li-ion battery electrochemical behaviors based on the modified P2D model, Li-ion battery electrochemical behaviors can be simulated fast and accurately without any difficulty. When you feel confused, please leave your messages for help.