

Hypothesis: Improved optimal control tools will allow greater increases to be made with renewable energy. Can improve optimal control tools by creating an NLP solver that can take advantage of parallel processing.

Intellectual Merit: Distributed computing will allow large decreases in time to compute. Will allow potential for onboard optimal control. Will allow for solving of bigger problems. Current NLP solvers not designed to take advantage of parallel processes

Broader Impact: Increased ability to solve optimal control problems. Fits nicely with naturally distributed problems (ex. electric grid, air traffic control, etc.). Space processors have to be slow so that they do not overheat inside their radiation shields and so optimal control will be feasible onboard if multiple processors are able to be used.