**Research Overview:** This project aims to develop methodologies to manage uncertainty in future electric power systems and quantify how uncertainty affects power system sustainability. This research is conducted at University of Michigan Ann Arbor from 2015-2018 with a funding source from NSF.

**Methods:** We mainly take advantage of the following two types of methods:

1. Stochastic optimization techniques such as chance-constrained optimization, CVaR-constrained optimization, and distributionally robust optimization.

2. Optimal power flow analysis with renewable generation from wind and demand response from load control.

**File Inventory:**

In Deep Blue - <http://hdl.handle.net/2027.42/149653>:

The “papers” files are all of our publications under this project.

The “posters” and “talks” files contain all the relevant information regarding each of our publication.

In Deep Blue Data - <http://www.doi.org/10.7302/413q-2c95>:

Code.zip - contains all the relevant information regarding each of our publication.

**Use and Access:** the codes are developed under MATLAB.

**Suggested Citation:**

B. Li, Y. Zhang, S. Shen, and J. L. Mathieu, “Data-driven approaches to managing uncertain load control in sustainable power systems (code),” *University of Michigan - Deep Blue, 2019.* <https://doi.org/10.7302/z23r0r29>

B. Li, Y. Zhang, S. Shen, and J. L. Mathieu, “Data-driven approaches to managing uncertain load control in sustainable power systems (papers, talks, posters),” *University of Michigan - Deep Blue, 2019.* <http://hdl.handle.net/2027.42/149653>