

Bayesian optimization for efficient parameter space coverage with computationally demanding simulations in fusion – Aaro Järvinen

Motivations

- Computationally expensive models with uncertain parameters are ubiquitous in MCF research → manual UQ is not tractable

Results

- Applying Bayesian optimization opens a potential for efficient algorithmic Bayesian inverse UQ

Challenges

- Curse of dimensionality, failure handling, batch acquisition, balancing exploration-exploitation for efficiency vs. coverage

