Topic Description

Master Thesis

Performant Photovoltaic Simulations on the GPU

## Background

Photovoltaic (PV) systems are experiencing a major increase in installations around the world, offering individuals a way to participate in energy transition. However, PV yield depends on location and surrounding objects that cause shading. To address this, software like simshady exists, an open-source GPU-based JavaScript package powering openpv.de. Simshady can calculate annual PV yield based on sun irradiance and neighboring objects – more details at github.com/open-pv/simshady

**What are the goals of the work?**

The goals of the work include implementing a wrapper for the simshady package to have a CLI tool for PV yield estimation that can be run using node.js. Additionally, a performance estimation is needed to determine how much computation time is required to simulate the whole city of Munich. The simulation results will also be compared with other tools for PV yield estimation to measure the accuracy and reliability.

**What should you bring with you?**

* Basic knowledge of JavaScript and a willingness to improve your skills
* Previous experience with WebGL is beneficial, but not required
* Please attach your CV and grade report to your application

## Contact

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