



Unlimited clean energy with zero emissions?
Certainly.

Master's Thesis – Real Time Cloud Tracking via Sky Imagery for Improved Operation of PV Plants

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Essential to ABB's business success is its strong Research & Development program, which together with ABB business areas create the next generation of ABB products. Our Corporate Research Center in Baden-Dättwil, Switzerland is one of seven global ABB Corporate Centers focusing on Process Automation, Communication and Power Technologies. We believe that practical experience is important for the development of the next generation of scientist. Accordingly, we are constantly looking for master's students wishing to gain professional experience while making an impact in our research.

Your Project

PV plants harvest energy from the sun to produce electricity. Unfortunately, variations in the Global Horizontal Irradiance (GHI), a primary measure of incoming solar energy, can lead to fluctuations in power generation rates that affect the operability of PV plants. One specific variation in GHI is caused by the movement of clouds that can cause partial shading of the PV modules. Predicting short term irradiance levels by monitoring sky conditions thus represent an opportunity for improving the operation of PV plants.

Your Task

As part of the control and optimization group, you will design and implement a sky image acquisition and processing system to be used for cloud motion prediction.

Requirements

You are currently pursuing a Master's degree in Computer Science with outstanding academic credentials. You are acquainted with pattern recognition, statistics, machine learning and systems automata and have experience in image processing. Image processing tools and algorithms are well-known to you. You are competent in using Matlab. You are a self-organized team player but also have the ability to work independently. You have a very good command of English.

Starting date: September 2013 **Length:** 6 months

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