DEE-53117 Solar Power Systems

Practical work: Operation of PV power generators

- Visit to TUTs facility.

- Effect of irradiance, temperature and parasitic resistances on the operation of PV modules.

- Operation of series-connected PV modules under partial shading conditions and the effect of bypass diodes.

- Operation of basic MPPT algorithm (Perturb and Observe) under varying operating conditions.

- Thermal behaviour of PV modules.

- Operation in real operating conditions compared to STC.

19.3.2019

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Requirements for the practical work:

- Mandatory presence during the practical work.

- A written report answering to the formulated questions.

- A total of 6 points can be achieved from the mandatory parts of the practical work.

- A minimum of 3 point is required for acceptable performance of the mandatory parts.

- If necessary, the student can revise the mandatory parts of the report once.

- Up to 4 extra points can be achieved from the optional parts of the practical work.

- A major assessment criterion is the independence of working in addition to the quality and originality of the report.

- **Deadline for returning the report is 2 weeks after the practical work session. Late submissions will be rejected.**

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Sessions for the practical work take place in PC Lab SF213A/B on

- Wednesday   3.4.2019,   09:00-12:00
- Friday   5.4.2019,   09:00-12:00
- Monday   8.4.2019,   09:00-12:00
- Monday   8.4.2019,   13:00-16:00
- Wednesday   10.4.2019,   09:00-12:00

- Signup for the practical work will be available in POP from March 5th until April 1st.
- Sing up only for one session!
- Practical work can be done in groups of 2 to 3 students, but each student has to provide an individual report.

- If you have completed the practical work acceptably earlier (since 2015) and do not want to do it again, please contact Markku Järvelä.

- Responsible on the practical work are:
  - Markku Järvelä (email: markku.jarvela@tuni.fi) and
  - Heidi Kalliojärvi-Viljakainen (email: heidi.kalliojarvi-viljakainen@tuni.fi).