

PV Systems - Components and Concepts

PV Modules I - Module Parameters, Orientation and Tilt

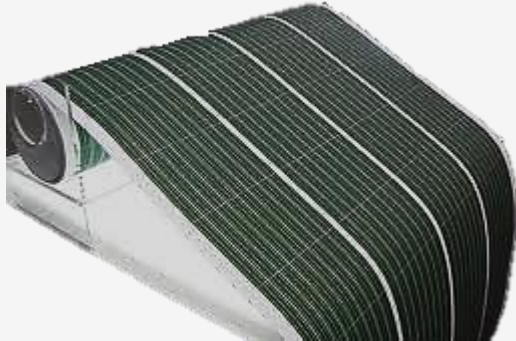
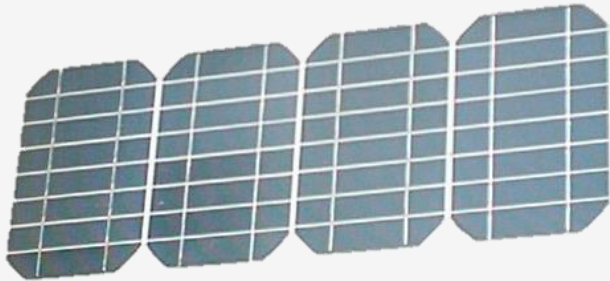
Week 7.2.1

Arno Smets, Nishant Narayan



PV module vs. PV panel

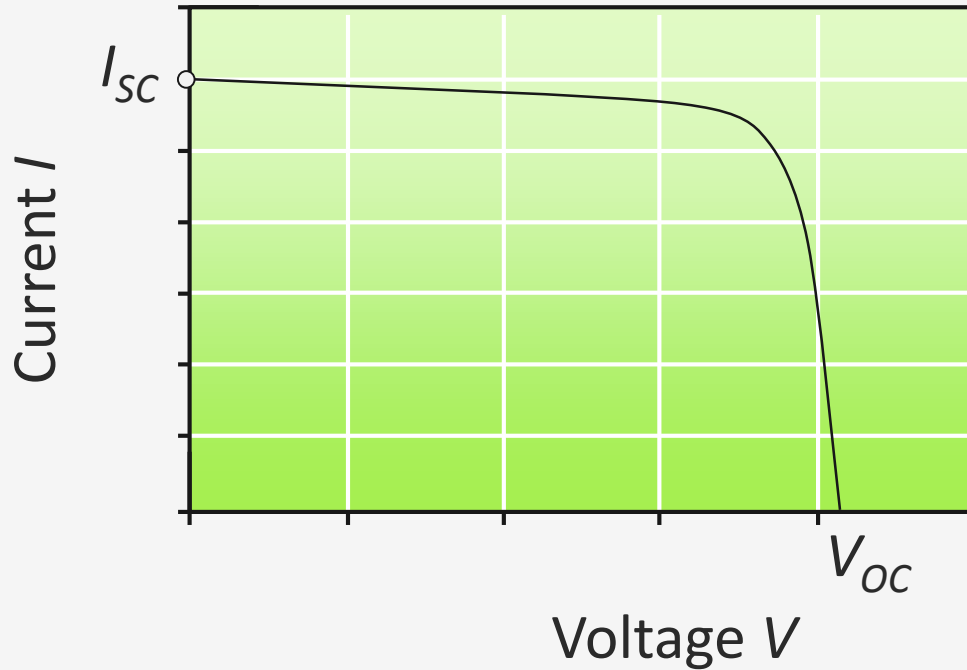
PV module



PV panel



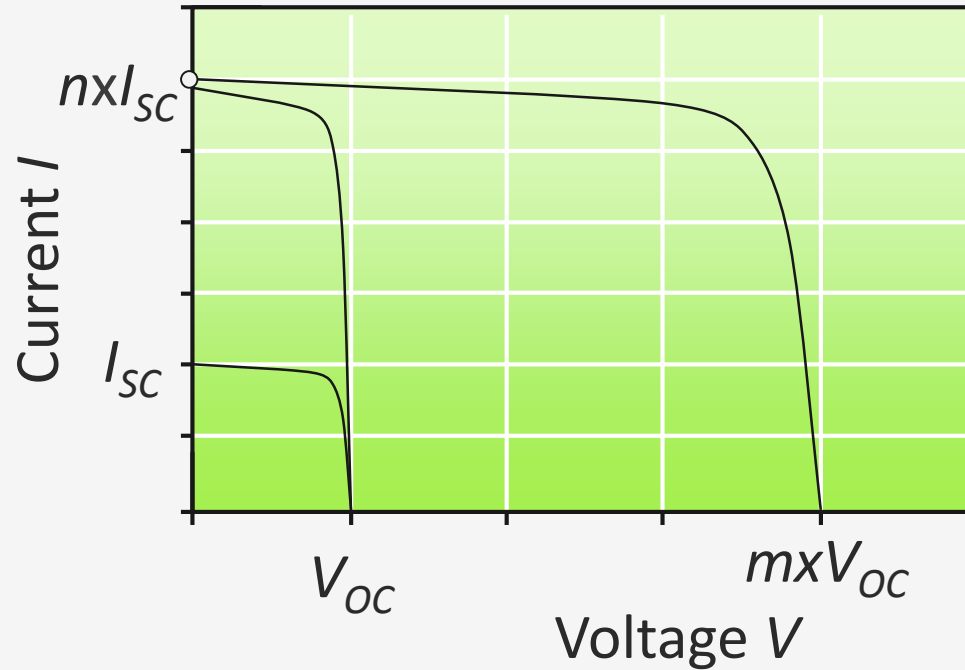
Generic I-V curve of a solar cell



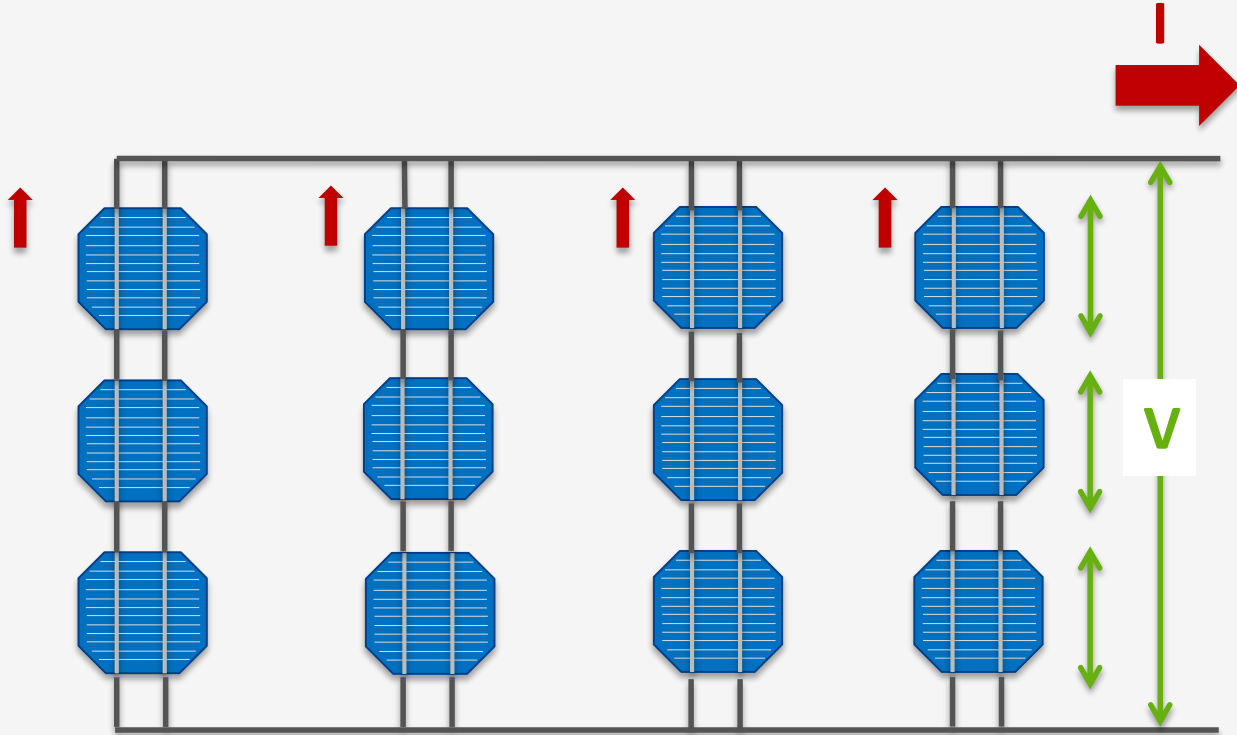
$$FF = \frac{V_{mpp} I_{mpp}}{V_{oc} I_{sc}}$$

$$\eta_{rated} = \frac{V_{mpp} I_{mpp}}{P_0}$$

Generic I-V curve of a solar module



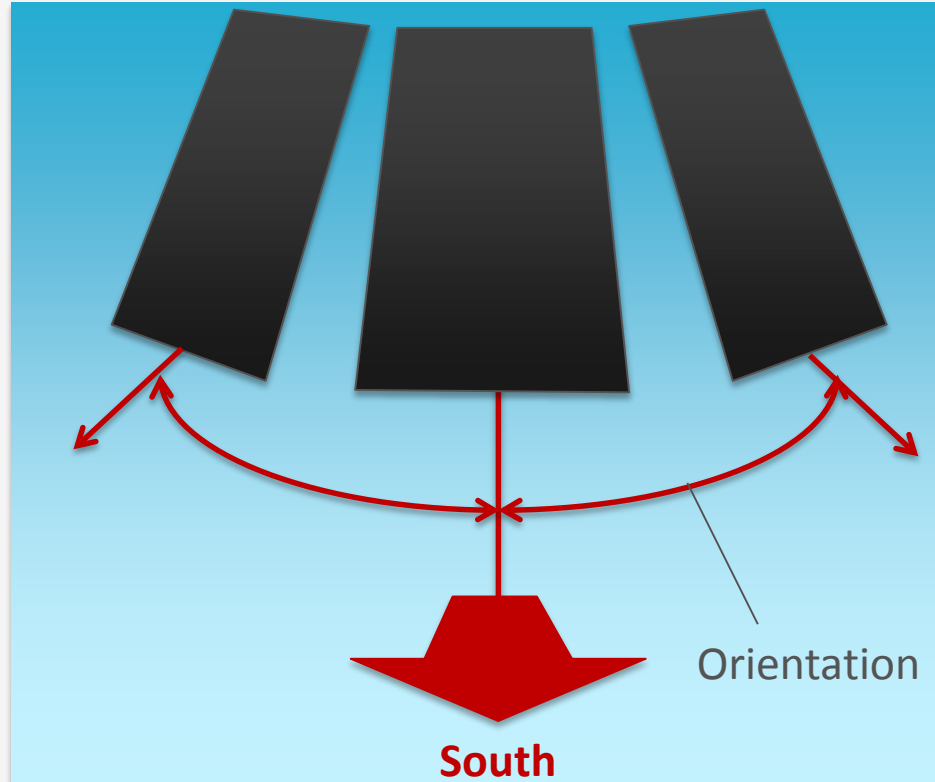
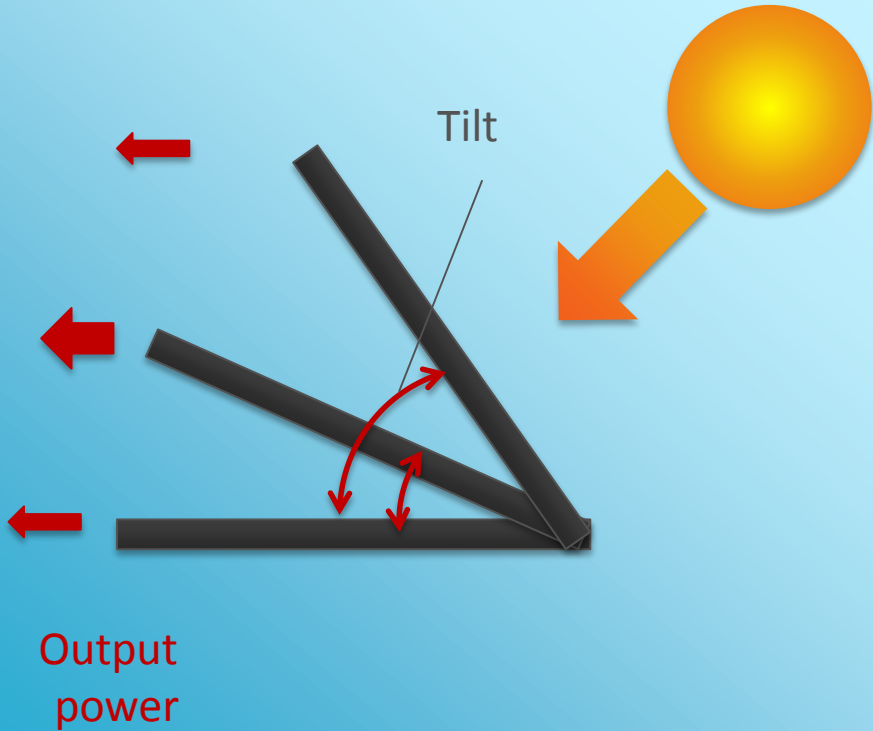
Interconnections in a solar cell

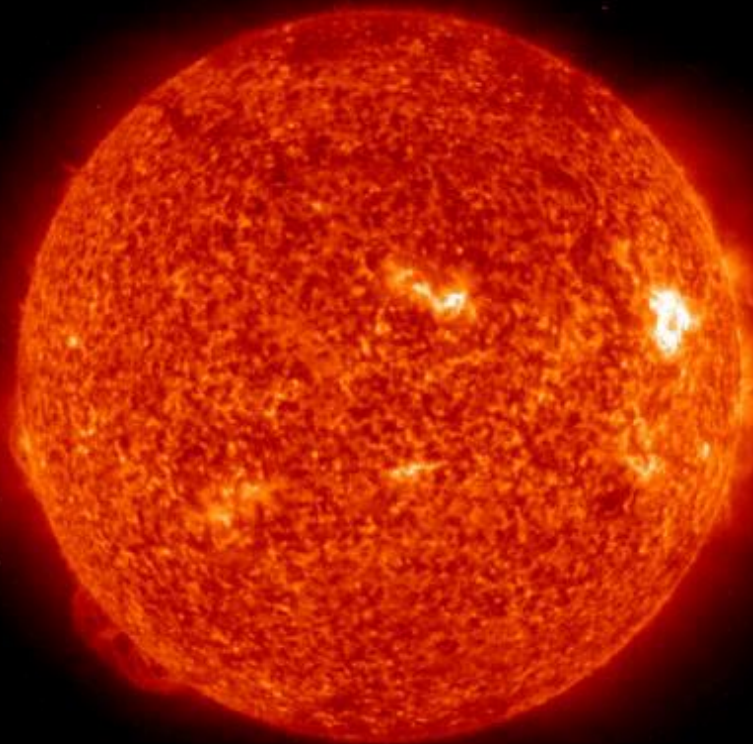






Tilt and orientation





(Source: NASA)

Thank you for your attention!