

Droop Control in DC Grids using the Universal Four Leg as Laboratory Setup

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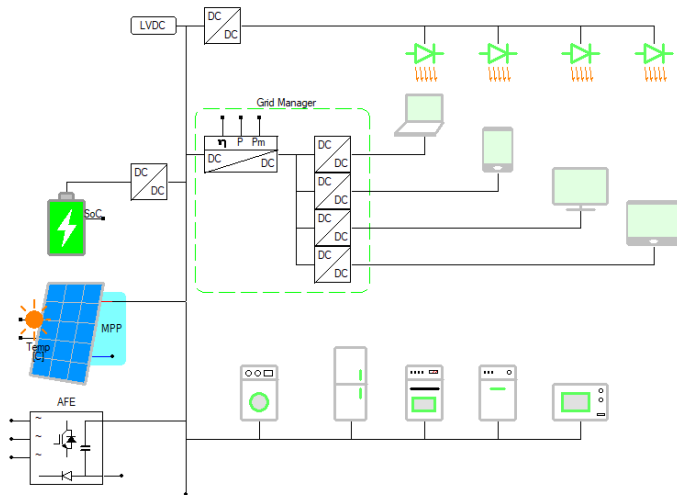
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- ➌ Grid Manager in a DC grid
- ➍ Droop Control
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Power Congestion Management via Droop Control

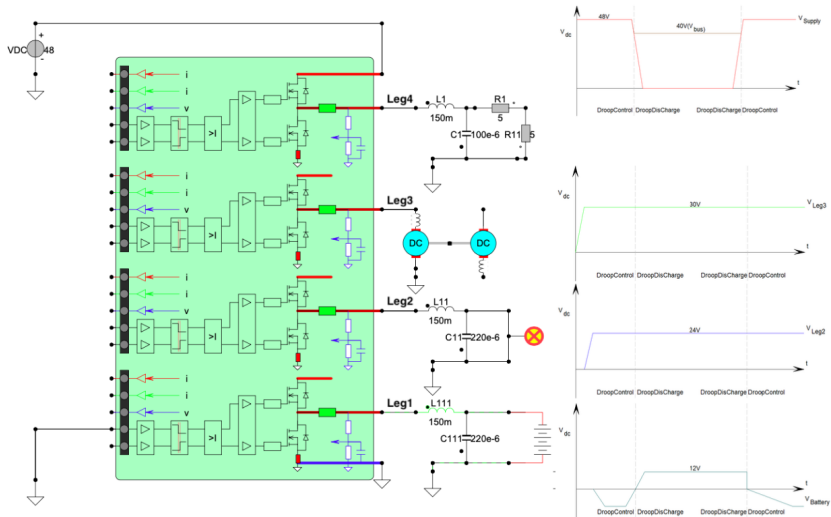
How to regulate current in a DC grid?

- Grid Manager
- Output current is controlled depending on available power
- Droop control only requires the DC voltage as controlling signal

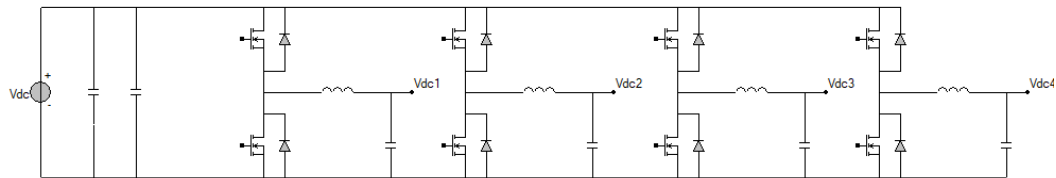
Grid Manager in DC grid



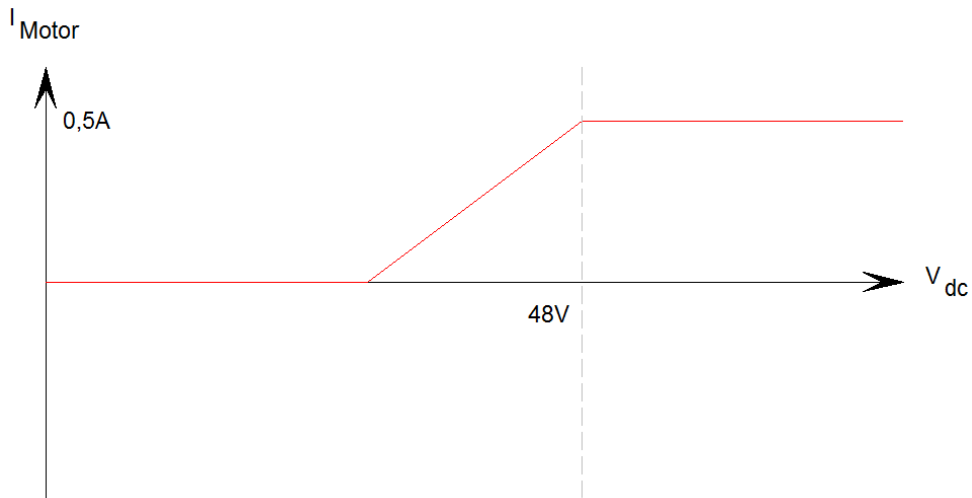
Grid Manager with Droop Control



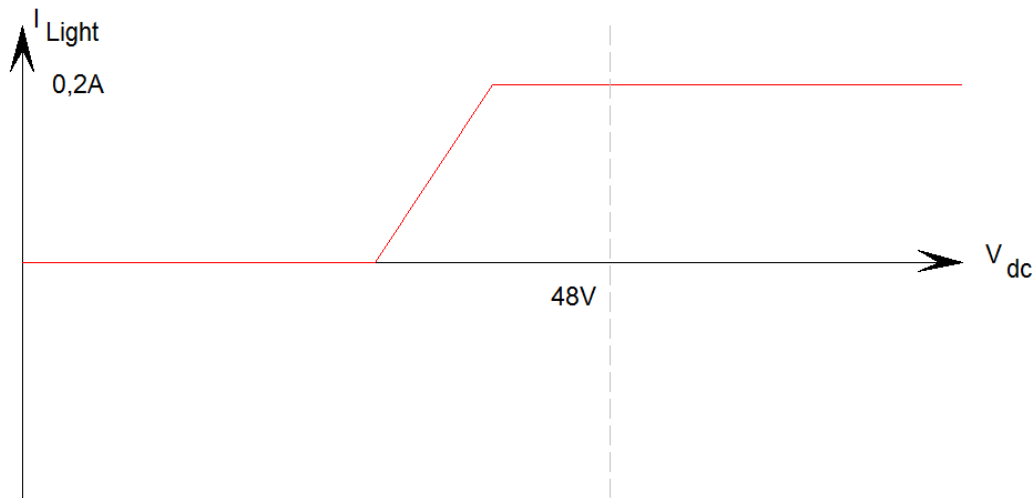
Grid Manager Power Electronics



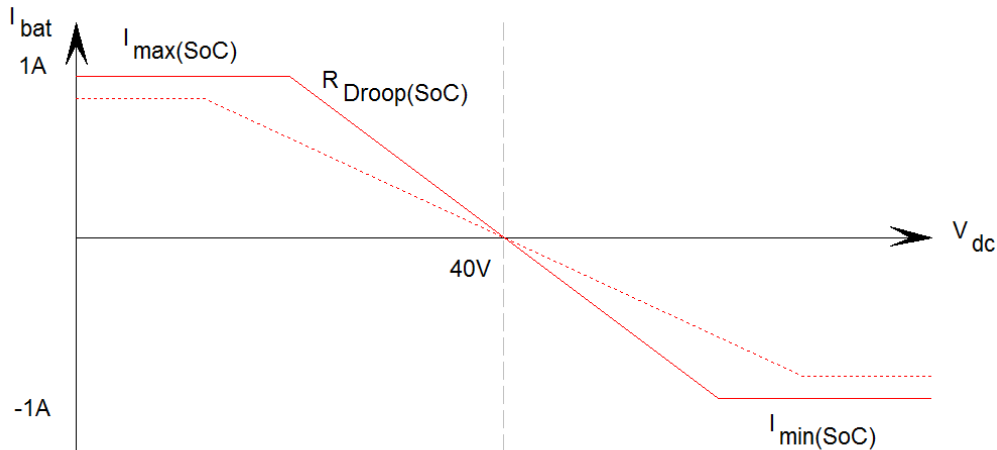
Droop Control Active/Passive Load



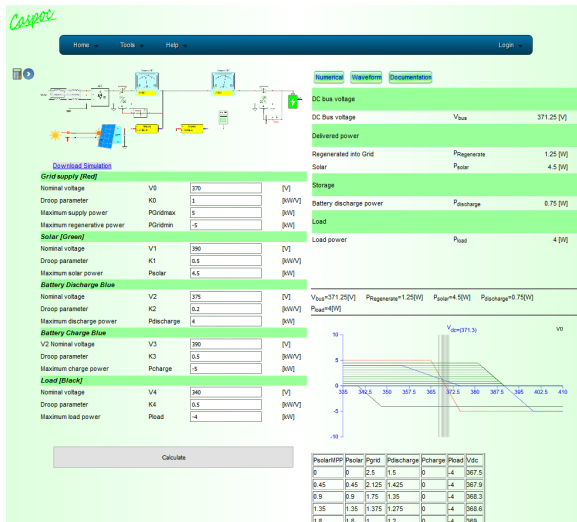
Droop Control Lighting



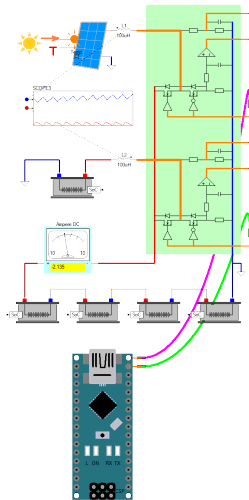
Droop Control Battery Backup



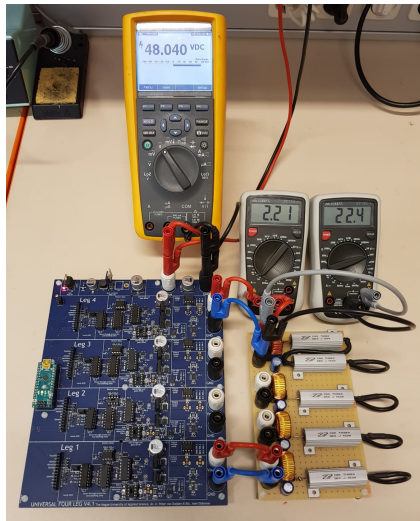
Droop control parameters.



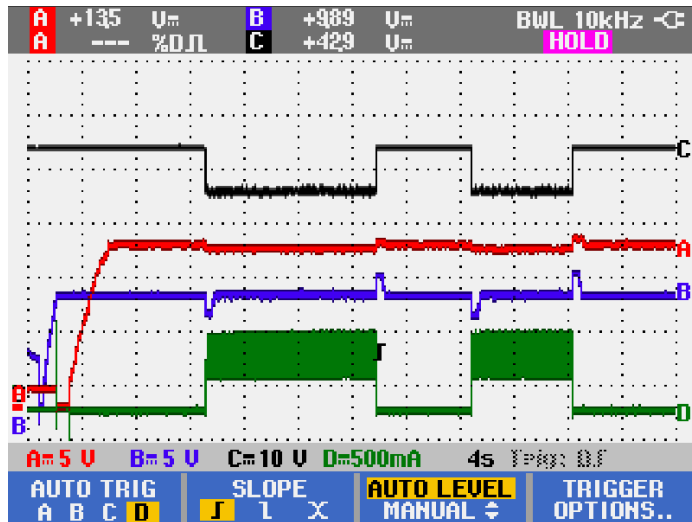
Typical solar-battery droop application.



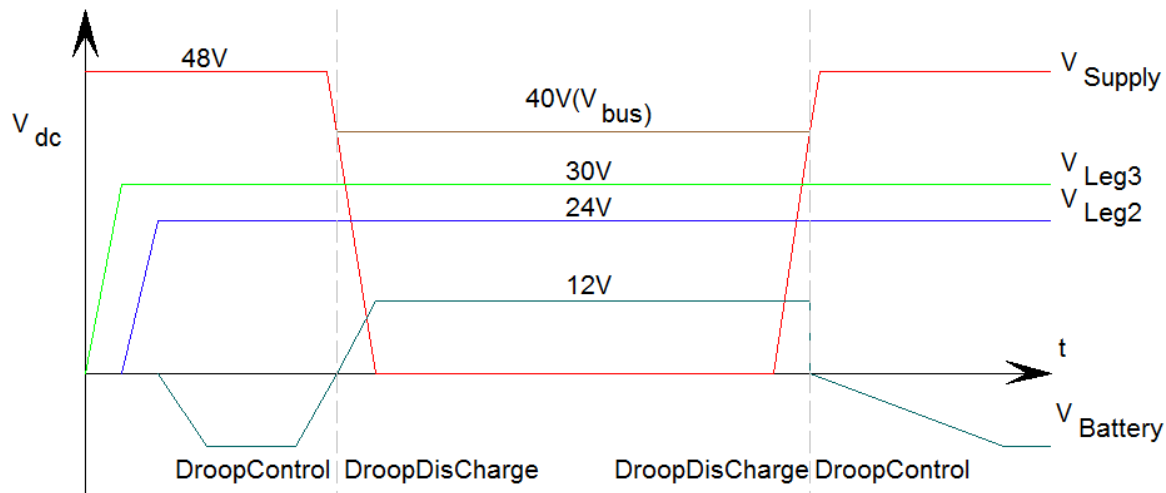
Realization of the smart current limiter



Measurement of the laboratory set up



Simulation of a typical droop control



Conclusion

- DC grids requires power electronics for control
- Power Congestion Management via Droop Control
- Teaching droop control using the laboratory setup U4L

Thank you!

